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ABSTRACT

This book is a collection of 16 papers that focus on what has been learned in two decades of developing and implementing large-scale national textbook programs. The seminar was designed to help participants make sound policy decisions about their own national textbook programs and to facilitate discourse among a wider audience of parties working to improve the quality of education in developing nations. Organized into four parts, the part headings include: (1) The Design and Implementation of Textbook Programs: An Overview; (2) Policy Issues in Textbook Program Development; (3) Provision of Textbooks: Developed Systems and Infant Industries; and (4) The Future: Will New Electronic Media Make the Textbook Obsolete? Many figures and tables are included and several of papers contain a list of references or a bibliography. (DB)

Economic Development Institute
of The World Bank

Economic and Educational Choices

Joseph P. Farrell
Stephen P. Heyneman

EDI SEMINAR SERIES

Textbooks in the Developing World

Seminar Series

Economic Development Institute
of The World Bank

Textbooks in the Developing World

Economic and Educational Choices

Editors
Joseph P. Farrell
Stephen P. Heyneman

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Contents

Preface

This book is based on a seminar sponsored by the Economic Development Institute of the World Bank which met in Washington, D.C., April 9–25, 1986. The seminar was directed by the coeditors of this book; the book consists of an edited selection of the background papers prepared for the seminar and records the main outcomes of discussion among its participants. The seminar, which lasted seventeen days, brought together twenty-five participants from twenty-two developing nations, eighteen consultants, eight members of the World Bank staff, and many observers to consider what had been learned from roughly two decades of developing and implementing large-scale national textbook programs. The immediate objective of the seminar was to help the participants make economically and pedagogically sound policy decisions about their own national textbook programs. The longer-term objective was to share—through this book and a slide-tape presentation—seminar discussions with a much wider audience of national textbook officials, international agency staff, and educational officials and scholars who are working to improve the quality of education in developing nations. This was the first seminar on this broad theme held by the Economic Development Insitute (or to our knowledge any other agency), and this book thus is a record of what we believe to have been a unique and important event.

The names of the twenty-five participants attending the seminar are listed at the end of the book. They were all senior officials of governments or parastatal agencies with large responsibilities for their national systems to provide textbooks. The twenty-two nations represented ranged from small (such as Honduras and Lesotho) to very large (such as Brazil and China) and from very poor to middle income. Both market economies and centrally planned economies were represented, as well as all regions of the developing world. The depth and broad experience of the participants was one of the most important resources available to the seminar. The consultants who prepared material for the seminar are also listed at the end of the book. Four of them—Alfonso de Guzman, Peter Neumann, John Overton, and Anthony Read—were present throughout most of the seminar and helped lead the discussions.

During the seminar, all aspects of textbook provision were examined, from obtaining raw materials for paper production to delivering tested texts to remote schools and from training teachers to establishing a system for evaluating, revising, and resupplying books. At each step, seminar participants and consultants examined alternatives and their consequences and drew upon their own experiences and the background papers.

Participants were first provided with an overview of the total textbook provision process which identified the primary decision points and issues to be discussed during the remainder of the seminar. At this stage, participants also shared information about the main features, accomplishments, and problems of each national system to provide textbooks. Next, papers which dealt in detail with many of the specific issues and decisions were discussed. Several national case studies, written to highlight the consequences of different sets of decisions in real situations, were then considered. Finally, participants worked through two decisionmaking simulation exercises designed to reflect conditions in a small, very poor nation and in a large, middle-income nation.

The chapters of this book follow the general flow of the seminar curriculum. Chapter 1 provides the economic and pedagogical context in which textbook decisions are made and an overview of the main issues and policy choices identified during the seminar. Part I (chapters 2–4) is an overview of the complex, interrelated issues and decisions involved in the design and implementation of a national textbook program. In chapter 2 Barbara Searle outlines the characteristics of the textbook projects with which the World Bank has been involved and identifies their main problems. In chapter 3, Anthony Read provides a detailed account of the alternatives available at each step in the textbook provision process and notes the elements to be considered in making each decision. In chapter 4 Adriaan

Verspoor looks at textbook programs from the point of view of the theory of implementing large-scale educational innovations—and especially discusses the ability of teachers to use textbooks at various stages in the development of an educational system.

Part II (chapters 5–8) is a detailed discussion of four particularly difficult policy issues in the development of textbook programs. In chapter 5 Savaranan Gopinathan deals with the complicated and often conflicting relations between private firms and the public. Although he draws primarily on his experience with book development in Asian nations, he raises issues that are salient throughout the world. In chapter 6 Harriet Tyson-Bernstein illustrates how in a rich nation such as the United States the political conflicts that inevitably accompany textbook programs have led to unsatisfactory books. This is a cautionary tale of problems which developing nations must try to avoid if they are not to invest in producing textbooks which are politically acceptable but pedagogically unsound. In chapter 7 Philip Altbach examines national and international copyright provisions which, if not carefully attended to, can create severe problems. In chapter 8 Paul Eastman looks at how the seemingly simple task of acquiring the paper for books has created serious problems for many programs. He analyzes the causes of the problems and possible solutions in varying national circumstances.

Part III (chapters 9–14) is a series of national case studies to illustrate the problems which have been encountered in textbook programs and the solutions which have been devised. Peter Neumann's comparison of the textbook provision systems of France, the Federal Republic of Germany, the United Kingdom, and the United States (chapter 9) shows the variety of options that rich, free-market states have. He demonstrates that although there are common issues among nations, there are no universal prescriptions. Authorities in each nation must devise solutions according to their own particular circumstances. The Indian textbook industry is the subject of chapter 10 by Narendra Kumar. This very large but very poor nation has developed a domestic book industry which serves not only its national market but also exports to other nations in the region. The argument is advanced, however, that a powerful state presence in textbook provision has inhibited the development of private publishing. The Mexican case, discussed by Peter Neumann and Maureen Cunningham in chapter 11, is an excellent example of how a carefully developed combination of public and private initiatives has produced an unusually successful national textbook provision system. The textbook project in the Philippines is one of the most complex, large-scale, and well-known programs in the developing world. In chapter 12 Alfonso de Guzman provides a detailed account of the problems encountered, the solutions devised for them, and the successes and failures of this massive effort. In chapter 13 Albert Aimé and John Overton analyze the development of a successful textbook program in a small, very poor nation, Lesotho. Of particular interest is the effective implementation of a revolving fund through which parents pay to support the long-term continuation of a program which the government could not possibly finance from its normal revenues. In chapter 14 Pat Malone describes regional cooperation among very small states in the West Indies to develop textbooks with low-cost assistance provided by a nongovernmental organization. This unusual model, which relies heavily upon volunteer effort, is being adapted for use in West Africa.

Part IV (chapters 15 and 16) looks to the future. More and more, one hears claims that soon new technologies, in particular the computer, will render the textbook obsolete. If these claims turn out to be correct, current expenditures on the development of large-scale textbook provision systems could turn out to be very bad investments of scarce resources. In chapter 15 L. R. Fernig and others present the case for the new technologies. In chapter 16 Paul Olson and Edmund Sullivan, drawing upon ethnographic work in schools in Ontario, Canada, suggest that the effect of computers on textbook use will be minimal.

Finally, we thank Hugh Oliver and Linda Perry for their valuable contribution in a preliminary editing of the papers.

Definitions

Billion equals 1,0000 million.

All dollars are U.S. dollars.

The Organisation for Economic Co-operation and Development (OECD) comprises Australia, Austria, Belgium, Canada, Denmark, Finland, France, Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States.

The World Bank consists of the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). The Bank has one central purpose: to promote economic and social progress in developing nations by helping raise productivity so that their people may live better and fuller lives. IDA provides assistance to the poorest developing countries—those with per capita incomes of less than $400 a year—on terms that would bear less heavily on their balance of payments than IBRD loans. The International Finance Corporation (IFC) is a World Bank affiliate that works specifically with the private sector in developing countries. The Multilateral Investment Guarantee Agency (MIGA) is also a World Bank affiliate.

Introduction

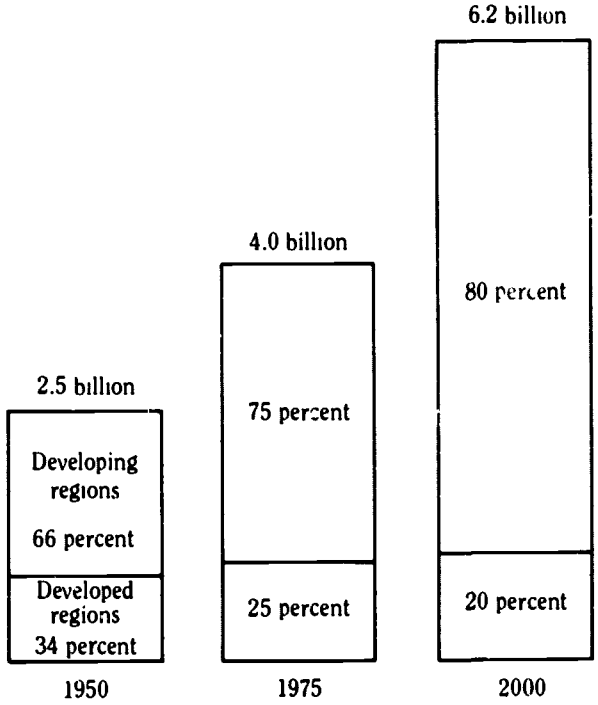
Joseph P. Farrell and Stephen P. Heyneman

The contribution of education to economic growth has long been recognized, although its specific effects are still subject to debate. The demand of parents for more educational opportunities for their children, coupled with the economic and political incentives for authorities to provide them, account for the recent unprecedented expansion of schooling.

Since World War II, universal primary school enrollment has been achieved in thirty-five of the richer developing countries, including Argentina, Gabon, Malaysia, and Trinidad and Tobago. In the thirty-six poorest countries—those with a per capita gross national product (GNP) of $265 a year or less—average enrollment in primary education increased from 48 percent of the school-age population in 1960 to 70 percent in 1977. Moreover, about 50 percent more children are enrolled in grade 1 than in grade 4, so this 70 percent enrollment figure significantly understates the proportion of children who begin school. Indeed, school enrollments in developing countries have been growing so rapidly that the balance of the "educational enterprise" has shifted from developed to developing regions. In 1950, about a third of the world's school population was in the industrial countries; by 1975 this proportion had slipped to a quarter; and by the year 2000, it will have slipped again to about a fifth (figure 1-1). By 2000, there will be 6.2 billion students in developing countries.

Maintaining this rapidly expanding enterprise is expensive. In the typical developing country, education usually accounts for 15 percent of recurrent public expenditures but can be as high as 30 percent. There are twice as many elementary school teachers today in developing countries as there were in 1960. There are 2.5 times as many secondary school teachers and almost 4.5 times as many tertiary-level teachers. Each teacher needs to be trained, placed, paid, retrained periodically, and eventually maintained in retirement. A corresponding increase has been required in school furniture, equipment, and reading materials. For instance, between 1960 and 1980 the number of book titles available increased by 15 percent in Latin America and by 33 percent in Africa. But despite such signs of progress, there are problems of such magnitude that the stability and productivity of these countries are at risk.

Figure 1-1. *The Expanding World of Learners*



Source: United Nations (1981).

World Economic Crisis

In developing countries, government resources have been severely strained by the fluctuation of oil and energy costs, slumping commodity prices, recession-plagued export markets, high interest rates, and the inflated value of the U S. dollar. This confluence of factors has generated a severe economic crisis. In 1982, for instance, 62 percent of the foreign exchange earnings from Brazilian exports had to be allocated to servicing the national debt. In Chile. the corresponding figure was 53 percent; in Ecuador, 48 percent; in Morocco, 43 percent; in Côte d'Ivoire, 32 percent; in Zambia, 22 percent; and so on throughout most of the developing world. And in many developing countries the situation has deteriorated since 1982.

The reaction to this crisis has been one of "adjustment." Developing countries have begun to reform their economies, often with surprisingly quick results. For instance, in 1981 the balance of payments as a proportion of GNP of the oil-importing developing countries stood at about −5.1 percent (table 1-1). Three years later, this deficit had been cut in half—to −2.1 percent. Similar changes can be observed with national accounts—from −3.9 percent in 1981 to −2.1 percent in 1984.

These fiscal improvements, however. do not come free of cost. They are the result of sacrifices across all levels of government and across all sectors. Highways are no longer maintained as they once were and as they ought to be. Pharmaceuticals can no longer be found in rural health centers. Subsidized fertilizers and pesticides are no longer available to farmers. Hardest hit of all is the largest public sector—education.

Macroeconomic Effects on Education

Because of fiscal pressures, the proportion of the GNP allocated to education has been on the decline, as has the share of education spending in government budgets. In one study of Latin America, for instance, spending per student fell by about 45 percent in real terms between 1970 and 1978 (table 1-2). Spending on elementary education fell from $90 to $50 per student, a difference of 45 percent; spending per student for secondary education fell by 51 percent, and for tertiary education by 63 percent. Declines have been even more precipitous in Africa. In Somalia, the share of government spending on education had to be halved between 1975 and 1983, falling from 12 to 6 percent of the national budget. During that period, Nigeria was forced to cut its education budget from 16 to 9 percent and Kenya from 19 to 15 percent.

Table 1-2. *Average Real Spending per Student in Latin America, 1965–78*
(dollars)

Year	*Primary*	*Secondary*	*Tertiary*
1965	71.8	168.4	1133.5
1970	90.2	166.1	970.4
1978	50.2	81.8	361.2

Source: Heller and Cheasty (1984).

Between 1970 and 1980, spending per student in the least developed countries fell by an average of 34 percent (figure 1-2). Because of the relative prosperity of countries in East Asia and of those belonging to the Organization of Petroleum Exporting Countries (OPEC), spending per student among middle-income countries actually rose by 25 percent. And in countries belonging to the Organisation for Economic Co-operation and Development (OECD), spending per student rose in that same decade by 46 percent—from $1,229 in 1970 to $2,257 in 1980. In other words, the gap in educational spending between the world's richest and poorest countries has widened (figure 1-3). In 1960, OECD countries spent fourteen times more on each of their elementary school students than did the world's poorest countries. By 1970, however, that gap had grown to twenty-two times more. And because of the fiscal crisis between 1970 and 1980, the gap became a gulf, increasing to fifty times.

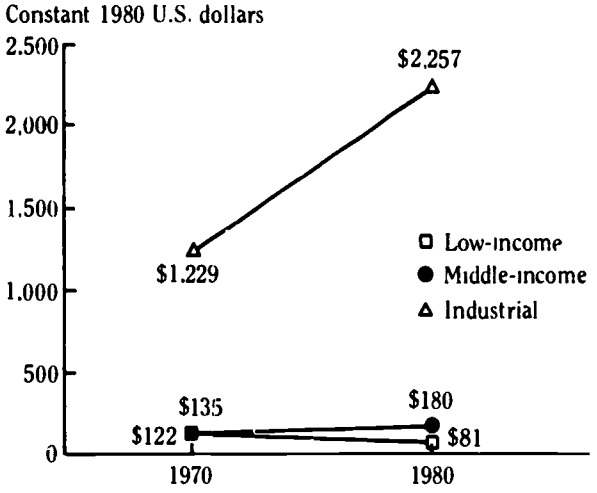
Where have educational reductions occurred? Although salaries of teachers often have not kept up with inflation, salaries have not been the main source of reductions (table 1-3). In Latin America, for instance, salaries of teachers were almost constant with inflationary trends between 1960 and 1979. In other middle-income developing countries, teacher salaries were about

Table 1-1. *Current Account Balance as a Percentage of Gross National Product in Selected Countries, 1981–84*

Basis	*Countries*	*1981*	*1984*
Balance of payments	All developing	−4.9	−1.8
	Oil-importing developing	−5.1	−2.1
National accounts	All developing	−3.9	−1.8
	Oil-importing developing	−3.9	−2.1

Source: World Bank (1985).

Figure 1-2. *Total Recurrent Expenditures per Student*



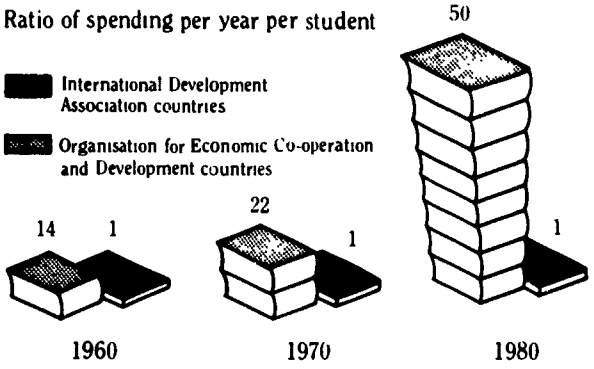
Source: Fuller and Heyneman (forthcoming).

three times the national GNP per capita in 1960 and about 3.5 times in 1979, a rise of 15 percent.

Reductions have largely been imposed on that category of the education budget—nonsalary expenditures—which cannot as easily defend its interests: money for chalk, maps, furniture, laboratory equipment, and textbooks. As a share of education budgets, nonsalary items fell in half of the Latin American countries between 1965 and 1970 and in all (non-OPEC) Latin American countries between 1970 and 1978. By 1979, nonsalary expenditures in elementary education represented only 4 percent of recurrent expenditures in Africa and only 9 percent in Asia—compared with 14 percent in the OECD countries (table 1-4).

In the 1980s, Bolivia has spent only 80 U.S. cents on nonsalary inputs for each of its elementary school students (figure 1-4) and Malawi has spent only $1.24. This

Figure 1-3. *Education Spending Gap*



Source: Heyneman (1983).

Table 1-3. *Average Salaries per Teacher as a Percentage of Per Capita Income*

Region	*1960*	*1979*
Actual		
Latin American and Caribbean	297	298
Other middle-income developing countries	303	349
Indexed (1960 = 100)		
Latin American and Caribbean	100	100
Others	100	115

Source: Lee (1984).

contrasts with such highly developed countries as Sweden, which can afford to spend $300 annually on equipment and reading materials for each student.

In Uganda, in 1970 there was an average of one book for every three elementary schoolchildren. But over the next ten years, there were no new reading materials available, and by 1980 the ratio had slipped to one book for every twelve students. In 1960, the United States published five times more titles (per million inhabitants) than Africa (table 1-5). Twenty years later, the United States published seventeen times more titles than Africa, eight times more than Asia, and five times more than Latin America.

What will be the outcome of this crisis? What effect is it having on the schools? First, students in developing countries are learning significantly less than students in those countries where reading and other materials are more abundant. Figure 1-5 presents elementary student academic achievement in general science in nineteen countries. The figures represent percentages of a standard deviation above or below the international average (*Z* scores). Indian and Chilean children are almost 2 standard deviations below the mean; Bolivia is more than 1 standard deviation below. This compares unfavorably with Japan and Hungary (2 standard deviations above the mean) or the Federal Republic of Germany (1 standard deviation above) or the United States and Sweden (0.5 standard deviations above).

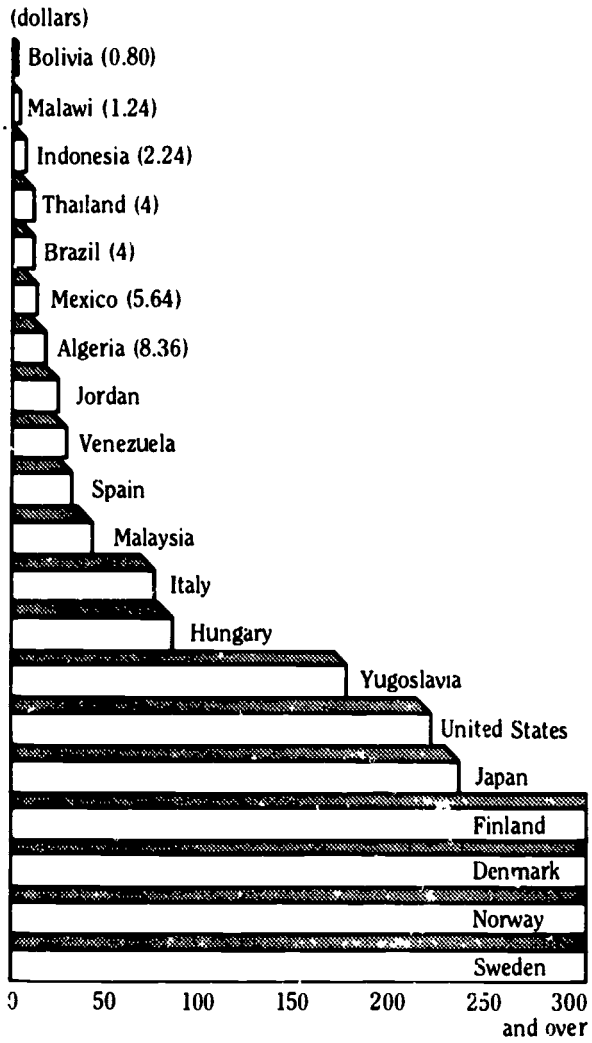
Levels of available reading material strongly determine the kind of educational experience a country is able to provide. Countries able to spend about $1 per student on classroom materials are at the lowest level in the quality of their education. Their students are

Table 1-4. *Allocation for Nonsalary Resources as a Percentage of Total Recurrent Expenditures*

Region or country group	*Primary*	*Secondary*	*Tertiary*
Africa	3.8	12.7	13.1
Asia	8.8	13.8	22.7
Countries in Organisation for Economic Co-operation and Development	14.4	14.8	25.5

Source: Unesco (1982).

Figure 1-4. *Spending on Classroom Materials and Other Nonsalary Recurrent Expenditures per Student Enrolled in Primary Schools*



Source: Heyneman (1984).

likely to be limited to rote memorization of simple, often inaccurate information (table 1-6). Countries able to spend about $3 per student are able to provide significantly more versatile and capable educational experiences. Countries able to spend from $40 to $300 per student may anticipate producing students who typically are able to investigate new ideas, recognize strong and weak supporting arguments, and become fully productive participants in a rapidly changing economy.

What then is to be done? How can developing countries stem the decline in educational quality? How can they acquire more materials for classroom use? How can they diminish the increasingly wide educational gap between themselves and OECD countries?

It is not clear whether there is a single solution to this crisis, but if so, it is unlikely to be a major economic

Table 1-5. *World Book Production by Region, 1960–80*

Region	Titles per million inhabitants		Titles per million inhabitants, ratio of United States to other regions	
	1960	*1980*	*1960*	*1980*
North America	91	468	—	—
Africa	19	28	4.8	16.7
Asia	53	56	1.7	8.4
Latin America	79	93	1.2	5.0

— Not applicable.
Source: Unesco (1982).

recovery in the near term. With few exceptions, commodity prices are in a semipermanent slump; prices of industrial necessities do not appear to be on the decline; the U.S. dollar is still very strong; and the world appears to be heading toward an era of protectionism rather than greater free trade. All in all there is little likelihood that more resources for education will come from increased levels of public spending.

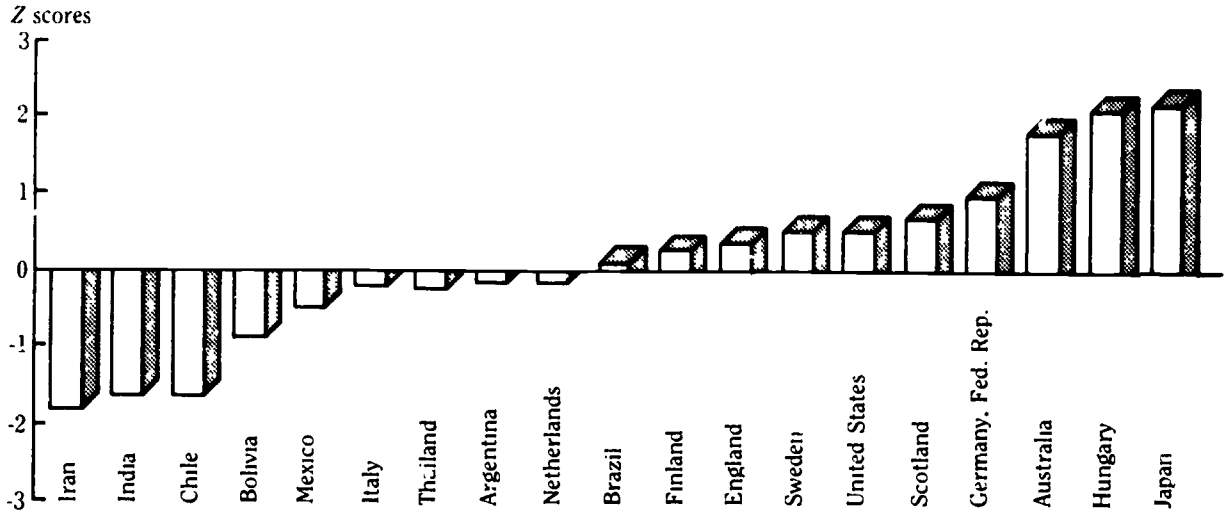
If countries are going to halt the decline in the quality of education, they will likely have to find the resources from within the education sector itself. They are going to have to spend more wisely than in the past, and they are going to have to challenge some widely held traditions in attempts to achieve their most important objectives.

In textbook production and distribution, there will be new challenges. Authorities will have to find ways of producing more materials for less cost. This may mean getting suppliers through (sometimes international) competitive bidding, rather than using public monopolies, and adopting a more realistic range of subject matter. Specific cost-cutting measures could also include seeking a different means of financing, accepting fewer local languages, using fewer colors in illustrations, and using thinner covers. Textbook authorities should recognize one basic principle: out of adversity comes invention. That the macroeconomic environment is adverse is incontestable. Whatever invention will be displayed by developing countries in textbook production remains to be seen.

Reading Materials and Learning

Evidence from the United States suggests that the inputs of a school—including quality of physical facilities, availability of educational materials, and levels of teacher education—are not strongly associated with student achievement (Coleman and others 1966; Jencks and others 1972). A growing body of data from the

Figure 1-5. *Primary School Science Achievement in Nineteen Countries*



Source: Heyneman and Loxley (1983).

developing world, however, indicates that the situation there is different. Variations in inputs appear to be reliable predictors of student achievement. The correlation between variance in science performance explained by classroom quality and national per capita income is approximately 0.37, which suggests that the poorer the country, the higher the impact of classroom quality on student achievement.[1] This finding may be explained by a much higher variance in the quantity and quality of school inputs in low-income than in high-income countries.

What inputs can be expected to raise student achievement in the developing world? Information is relatively scarce. A careful search of the literature located fewer than thirty studies on the cognitive impact of teacher training in low-income countries compared with almost four hundred such studies published in the United States in one year.[2] Similar imbalances of information exist with respect to textbooks, duplicating machines, audiovisual aids, radio, television—in fact, with respect to all school resources. Furthermore, results from available studies are ambiguous. Smaller class size and longer teacher-training programs are not always associated with higher levels of student achievement.

One of the more consistent indicators of higher achievement is the availability of textbooks and other printed materials (see Heyneman and others 1978; Heyneman and Jamieson 1980). Among nineteen recent assessments of the relation between the availability of printed material and student outcomes in developing nations, sixteen reported a positive relation. Textbooks, it seems, are an important and consistent contributor to improved quality in schools.

Responses

As evidence about the importance of textbooks to the educational process has accumulated, more and more nations have mounted major textbook development and provision programs. For example, in the 1982–83 school year, just over 4 million textbooks covering 94 titles were produced for the schools of the Yemen Arab Republic; three years later, the figures had risen to over 11 million textbooks covering 275 titles. In the mid-1970s, the Philippines embarked on an ambitious multiyear program to produce roughly 150 million textbooks, aiming to provide one book for every two primary students in each of the core curricular areas. Over two decades, Mexico has carefully built up a system for providing free textbooks to all of its primary school students. Even a nation as poor as Ethiopia managed, between 1975 and 1985, to print and distribute almost 40 million school textbooks. At the top of the scale, the most populous nation in the world—China—produces and distributes more than 2 billion school texts each year.[3]

International agencies have also been increasing their support for textbooks. The United Nations Educational, Scientific, and Cultural Organization (Unesco) has been sustaining a major international effort through its Division for Book Promotion and International Exchanges—see, for example, the works published in their

Table 1-6. *Stages of Development in School Quality*

Annual cost per primary student in classroom materials	*Indicator*	*Product*	*Examples*
Less than $1	One textbook per class. With some exceptions, the teacher has the only available book. Pupils expected to copy the text from the blackboard and memorize.	Rote memorization of unsophisticated and poorly interpreted information.	Uganda, Liberia, Haiti
$3	One textbook per student. Each student has access to one book in each subject. Comparatively little required teacher skills beyond those required at the above stage.	Major expansion of information and the efficiency of presentation. Little progress on self-generated skills of investigation.	Philippines, China
$40	Several different textbook titles available for each student. Pupils in lower grades work on locally designed exercises. Teacher picks and chooses from among the best or most appropriate available materials. Requires significant intellectual independence on the part of teachers.	Latitude of educational programs based upon individual student ability. Significant increase in the mastery of cognitive skills.	Malaysia
$200	Fifteen titles per student in supplementary reading material or forty books total per student in addition to a wide variety of curriculum packages, reference books, maps, dictionaries, film strips, lesson tapes, documentary films, and computer-assisted instruction. Significant managerial skills required on the part of teachers at all levels of education.	Self-generated habits of learning Ability to investigate new ideas and to recognize strong and weak supporting arguments. Major improvement in cognitive creativity. Wide exposure to culture as well as science.	Japan, United States, Sweden

Source: Stephen P Heyneman (unpublished)

series "Studies on Books and Reading." In a recent report prepared by the World Bank, it was noted that between fiscal 1979 and 1983, one out of three Bank education projects (29 of 90) had textbook components. In fiscal 1983, almost half the education projects included textbook components, with total costs of about $50 million (Searle 1985: 3).

In some cases, textbook provision is one part of a major educational reform effort. In others, provision of textbooks *is* the project. In almost all cases the contribution of the international agency represents only a small proportion of the total cost of a textbook program, and where the international contribution represents a high proportion of the total cost, the project is in an early stage of developing a provision system which the national government is committed to sustaining from its own resources over the long term.

Thus, over the past ten to fifteen years, nations throughout the developing world have been investing scarce resources in providing textbooks with assistance from international agencies. As a result, billions of textbooks have been produced, and millions of schoolchildren who would previously have had to learn without books now have access to them. This is a considerable accomplishment. Nonetheless, millions of schoolchildren in the developing world still have no textbooks at all, or an insufficient number of books, or books which are inappropriate for their age level. Furthermore, many of the existing programs to provide textbooks have encountered serious problems. It has become apparent that mounting and sustaining a national textbook program is far more complex than had been imagined a decade ago. Much has been learned, however, and it is a major purpose of this book to review and systematize experience to date so as to improve the provision of textbooks in developing nations in the future.

The Complexity of the Task

It has become evident that mounting a large-scale program to provide textbooks in a developing nation is an extremely complicated and risk-prone venture, with

implications well beyond the educational sector itself. Creating, producing, and distributing textbooks involves many parts of a nation's infrastructure, including the publishing industry, the educational establishment, writers, and government departments. International organizations and multinational publishing corporations are frequently involved. Copyright laws—seldom well understood or obeyed—further complicate matters. The production of textbooks requires substantial amounts of imported paper and technologically advanced printing facilities. It also requires planning, development, funding, testing, and distributing, as well as the coordination of educational, governmental, publishing, and printing resources. As Philip Altbach (1983) has noted:

> The keys to effective textbook development are not massive fiscal expenditures or crash programmes, but rather careful co-ordination, attention to the articulation between the educational system and the publishing industry, linking curricular development and the expansion of enrollments to textbook requirements, and the involvement of the necessary expertise in the development of relevant and high-quality textbooks. The textbook situation in any country depends on the state of the publishing industry (including printing capacity, the availability of paper, and the distribution network), the presence of competent authors (and the research and testing facilities to ensure relevant textbooks), and the educational system (Altbach 1983: 316).

Developing a sustainable textbook provision system is much like developing a complex new industrial sector—and the complexity is equally forbidding, whether the system is managed by the public sector, the private sector, or a combination of the two. One must establish, train, and administer (or hire) separate teams of people to undertake each of the following general classes of activity and establish an administrative system to coordinate them:

- Design and write books—starting with curriculum guidelines and finishing with copy ready for manufacture.
- Manufacture books—including acquisition of raw materials (such as paper, ink, film, binding materials), printing, and binding.
- Distribute books—getting them from the point of manufacture to all the classrooms in the nation, even the most remote, on time and in good condition.
- Provide ancillary support—including complementary teaching materials (for example, chalk, lab supplies, and so forth) and training teachers how to use the books.
- Evaluate and resupply or revise books as required.

What has proven to be critical is a view of textbook provision not as a one-shot arrangement but as a long-term investment in a total system. The range of issues which have to be addressed and for which responses have to be coordinated is indicated in the following list of questions which we sent to the authors of each of the national case studies included in this book.

1. On what grounds (financial, pedagogical, philosophical) was the decision taken to mount a major program to provide textbooks?

2. What provisions have been made to ensure that the program continues beyond the first round of book distribution? Is there a permanent organizational entity within the Ministry of Education or within another part of the government? Why was this particular structural arrangement chosen? How is the program financed to ensure its long-term sustainability? Is there an annual appropriation from general revenues, a special protected fund, or a revolving fund based upon parent or student payment for books, foreign assistance, or some combination of the above?

3. How are textbook manuscripts developed and approved for use in schools? What mechanisms are used to ensure correspondence between curriculum guidelines and textbook content? Who sets the guidelines and how are they communicated to textbook developers? Who are the textbook authors—practicing teachers, university faculty, curriculum specialists, or others? What are the mechanisms for editing, field-testing, and evaluating manuscripts? What are the mechanisms for final approval of manuscripts for publication?

4. What is the language (or languages) of publication? If there is more than one, which books are published in which languages and why?

5. Was the decision made to (a) import books, (b) publish locally, (c) print locally, or some combination of a, b, and c? If a combination, which books are imported, which are published and printed locally, and why?

6. For locally published or printed books, is the work done by a state agency, a parastatal agency, private commercial firms, or a combination of the above? On what grounds were these decisions made?

7. How are books distributed to students? What were the physical transport and storage problems, and how have they been resolved? Is final distribution through schools, commercial outlets, or some other entity?

8. Who pays for the books? Are they supplied free by the government, paid for or rented by parents, or is there some other arrangement?

9. What evidence is available about the use and effectiveness of books in classrooms? Are students able to take books home with them or are they kept in the school? What is the expected lifetime of the books?

10. What is the program's management structure?

What is the range of responsibilities of the central coordinating office, and where is it located administratively? What provisions are there for coordination and control between the central office and other agencies involved in textbook design, production, and distribution? What problems have been encountered in management, coordination, and control, and what has been done to solve the problems?

11. What provisions are there for training classroom teachers, textbook authors, editorial staff, publishing staff, graphic artists, designers, manufacturing staff, and other staff?

12. How are paper supplies obtained? Have there been any serious difficulties obtaining paper?

13. What is government policy about copyright on locally produced textbooks and on copyrighted material from other countries? Have there been any serious problems or conflicts over copyright?

14. What provision is there for regular evaluation and revision of textbooks? Who evaluates and how often? What kinds of evaluation are used? How are the results fed back to textbook developers?

Given this complexity, it is not surprising that major problems have been encountered in many textbook provision programs. A review of World Bank experience noted the following general classes of difficulty (Searle 1985):

- Inadequate attention to the financial feasibility of the systems for providing books
- Providing support for book purchases or printing without concomitant support to ensure suitable educational content, adequate teacher training, or effective distribution
- Failure to establish appropriate institutional arrangements for managing the full system for providing books.

In a review of textbook publishing organizations throughout the developing world, a Unesco study noted the following common shortcomings (Pearce 1982: 20–21):

- Underestimation of the size and complexity of the task
- Lack of adequate publishing advice in planning operations
- Inadequate management resources
- Confusing the functions of printer with those of publisher
- Lack of understanding of the difficulties and time required to produce educationally satisfactory manuscripts related to prescribed curriculums
- Failure to consider textbook publishing as an integral and basic part of a total national book publishing industry.

Another Unesco study concluded that there was a lack of awareness of basic economic facts of book publishing in many developing nations, sometimes even among publishers themselves (Smith 1977: 7–8).

One central lesson can be derived from all the experience to date: providing books to schools where there is little or nothing to read may seem like a simple undertaking, but it is not. Every developing country—from China to Guinea—is concerned to design, manufacture, and distribute its own textbooks. But this concern needs to be analyzed carefully. Instead of producing books locally from scratch, it may be much cheaper to import technical experience, equipment, and raw material (particularly paper) from Western Europe or North America. The publication process demands substantial experience in editing, production, printing, testing, and distribution. Six to ten years is normally required to develop a new generation of textbooks for primary school grades 1 to 6. Given the necessary skills, this may be economical for books on local history, civics, and literature; but in mathematics and the sciences it may be cheaper to adapt already published materials. Furthermore, it is often more economical for countries to publish their own textbooks than to print them. Printing in large quantities requires specialized and expensive machinery, a constant supply of raw materials, and various maintenance skills; publishing requires editorial and design skills, but the hardware for manufacture need not be local.

Key Issues and Choices

In the course of the seminar upon which this book is based, a set of major issues and choices were identified and discussed. Brief consideration of them at this point will provide the reader with a conceptual roadmap through, and a context for, the varied papers which follow.

An Overriding Constraint: Readership Size

A fundamental condition which constrains almost all other choices is the size of the prospective readership for a given textbook. In private commercial publishing, this is referred to as "market size," but we have used a more general term because the basic principles apply equally to government publishing in a nonmarket setting. Simply put, the larger the readership for a particular book, the greater will be the total cost of producing it, but (all else being equal) the smaller will be the cost per book (unit cost).

Readership size is itself influenced by a number of distinct factors. First, obviously, is the total school-age population of the nation. Second is the enrollment ratio at any given grade level. Even in developing nations

which enroll almost all age-eligible children in first grade, there is typically a high dropout rate during primary schooling; thus the readership size for a sixth or seventh grade text may be half (or less) that for a first grade text, and the readership for secondary level texts may be very small. Added to this is the degree of specialization of the book. In most nations, the curriculum is common throughout primary schooling and often through at least part of secondary schooling. In such cases, the readership for a given textbook is the total enrollment at the particular grade level. But at some point the curriculum becomes diversified—different students study different subjects—and then the readership for a given book becomes a fraction of the total grade-level enrollment. This frequently produces serious difficulties and hard choices at the upper secondary level and even more serious difficulties at the university level. At this point, the total population of the nation becomes very important. For example, a university-level physics textbook serves a very specialized audience, but in a large nation such as Brazil or India the total readership may still be large enough to justify locally produced texts; by contrast, a small nation may have no choice but to use imported texts.

Another factor affecting readership size is language of instruction. Clearly, the greater the number of languages in which books must be produced, the smaller the readership for any given language version, and the greater the cost per book. Small multilingual nations face very difficult choices from the early primary level on. But even large multilingual nations frequently find that at the secondary level, where enrollment ratios are low and the curriculum diversified, a switch to single-language publishing is the only economically viable option.

The problems created by failing to consider readership size are illustrated by the case of Lesotho in the early 1970s. This nation's total population is less than 3 million. The government set high-quality specifications for textbooks, which were published and manufactured by local private firms. Because of the small market and the high standards, the book prices were high, beyond what most parents in a poor nation could afford. Consequently, few schoolchildren had books. Dropout rates were high and enrollments declined. Moreover, because sales were low, the commercial publishers could not recover their costs. The chapter by Aimé and Overton describes how in Lesotho a subsequent textbook program, which has taken readership size into account, is successfully overcoming these problems.

Generally, the larger (or more affluent) a nation, the less difficult are the constraints imposed by readership size. In some cases, however, even very small and very poor nations have found imaginative ways to work within these constraints, such as pooling resources across national boundaries and adapting foreign texts. For example:

- Three small West African nations—Côte d'Ivoire, Senegal, and Togo—share textbook publishing and printing costs. Their Nouvelle Editions Africains are used in all three nations.
- Several Commonwealth nations have negotiated with an international publisher to provide history texts. The books for all of the nations contain a standard set of chapters dealing with international history, combined with chapters which deal with each nation's history. The resulting books are both locally relevant and low cost, even in very small markets.
- Malone's chapter demonstrates how the small island states of the English-speaking Caribbean combined efforts to produce economically manageable texts even in so specialized a subject as home economics.
- Many small nations (Sierra Leone is an example) have successfully combined local development and production of general primary texts with adaptation of foreign texts for more specialized subjects with small readerships at higher schooling levels.

A Basic Macroeconomic Decision: State versus Private Sector

In all nations, government tends to intervene strongly in the textbook provision process. Even in the most market-oriented economies such as the United States and the nations of Western Europe, government and government agencies (whether at the central, state or provincial, or local level) attempt to regulate and control textbook provision. In other words, in the area of textbook provision there is no such thing, empirically, as a wholly free market. Nations differ in the degree of state intervention, the locus of state intervention (that is, centralized or decentralized), the mechanisms of state intervention, and the extent to which the state formally owns (directly or through parastatals) the various agencies of textbook production and distribution. The range of choices available to a nation regarding private and public sector participation is very wide. In her review of textbook provision programs assisted by the World Bank, reported in the following chapter, Searle notes "the diversity of patterns in which alternatives are combined. This diversity is an important finding because the existence of such a variety of possibilities complicates the task of designing or modifying a book provision system." Even more significantly, this diversity indicates that there are few predeterminable choices between the private and public sectors.

Table 1-7 describes the patterns of state and private sector participation in the preparation, printing, and

Table 1-7. *State and Private Sector Participation in Three Stages of Primary School Textbook Provision among Twenty-one Developing Nations*

Preparation	*Printing*	*Distribution*	*Number of cases*
State and private	State and private	State and private	5
State	State	State	4
Private	Private	Private	1
State	State and private	State and private	1
State	State and private	State	2
State	State and private	Private	1
State	Private	State	1
State and private	Private	State	3
State and private	State and private	State	2
State and private	Private	State and private	1

Source Country reports from seminar participants.

distribution of primary school texts in twenty-one nations represented at the seminar. There are ten distinct patterns among these nations. The most common pattern (five nations) is a combination of state and private sector participation in all three stages. The next most common pattern (four cases) is exclusive state participation. In only one case was the private sector exclusively involved in all three stages, and here the government exercised considerable control through regulation of the private sector. These three patterns account for just under half (ten) of the twenty-one nations. The remainder are scattered across seven other patterns or combinations of state and private sector participation.

Clearly, the empirically viable policy questions have to do with the appropriate degree of, locuses of, and mechanisms for state control or regulation in a given set of national circumstances. Thus understood, the question of the appropriate balance between state and private sector in textbook provision was a central theme of the seminar. No universally applicable pattern was sought or found. Cases were examined in which the state presence was overwhelming, either because a political-economic decision had been made which disallowed the development of a private sector or because a private sector textbook enterprise was not seen as viable. Where the two sectors coexist (as happens most frequently), there are many instances in which a strong state presence has clearly inhibited the growth of the private sector. In many nations, the development of a viable local general publishing industry is dependent upon private sector access to the textbook market. There are other instances, however, in which strategically organized state intervention has assisted the development of the private sector. It was noted that private sector publishing is frequently cheaper than government publishing (although government publishing sometimes appears cheaper because accounting systems disguise some costs), but in other cases government publishing was clearly the cheaper alternative. Again, one must judge in terms of the real alternatives available at a given time and place. In short, pedagogical and economic pragmatism should be the guide rather than ideological predisposition toward either the private or the public sector.

Local versus International Publishing: To Protect or Not?

All nations insist upon state influence on school curriculums and consequently on textbook content. A natural extension of this normal public prerogative is often to assume that textbook design and manufacturing should be done by local firms.[4] The line of reasoning is similar to that for any other enterprise in which there is perceived to be a national interest—namely, that local jobs are at stake; that a local enterprise has a comparative advantage; that local capacity (not currently extant) requires experience and therefore "protection" in its infant stages; and that foreign contracts consume scarce foreign exchange. Such arguments are put forward in many domains of manufacturing and commerce, often with great passion: the nation's future "depends" on having these products manufactured locally; its culture and its pride are at stake; and so on.

It became clear during the seminar that local control is distinguishable from local ownership. Many nations have opted on economic grounds for offshore publishing or printing of textbooks (indeed much of the manufacturing of both textbooks and general books for developed nations is done in developing nations) while maintaining a satisfactory degree of control over textbook content and design. Given such experience, the choice between local or international publishing and printing should be based upon economic analysis. In some cases, full origination or adaptation by an international firm is the most sensible alternative. In others, the use of local publishers and printers is either the economically most sensible approach or the only available alternative, especially when the language of instruction is unique to a nation. If the decision is made to use local industry, the question of whether or not to protect that industry inevitably arises.

Protection can take many forms: taxes on foreign imports, incentives for local production (contractual advantages and the like), subsidies (for instance, use of government postal services for distribution), or outright prohibition of foreign products. If protection is re-

quired, it implies that local sources are not competitive with international sources. Whatever form protection may take, and however good the reason for it, protection has a monetary cost. The relevant questions are: How much is that cost? Who is asked to pay? Is the justification for the additional cost acceptable? One other general principle needs mention: there is never enough money in an economy to accept all claims for protection simultaneously—those from industry, manufacturing, agriculture, services, and so forth. If all claims for protection were to be accepted, it would bankrupt any economy. Consequently, when is protection justified in the production of textbooks in developing countries?

In addressing this question, countries are likely to find that the case for protecting local publishing is usually stronger than that for protecting local printing. In some countries, local printing is above international market costs because of the separate protection of local paper manufacturing industries. In these instances, the claims of the Ministry of Education for permission to use international printing can be pitted against the claims of the Ministry of Agriculture or of Industry in favor of local manufacturing. It doesn't matter which ministry causes the protection; what matters is the magnitude of its effect—namely, the increased cost of the textbooks.

In other cases, particularly small economies, the purchase of international paper is in such small quantities and the cost of maintaining expensive equipment is so high compared with its level of utilization that a comparative advantage is unlikely in relation to an international printer. Therefore the two procedures (publishing and printing) should always be analyzed separately for their costs and benefits.

Even local publishing is not always the most cost-effective. There are more Bahasa authors in Jakarta than in London, and so books in Bahasa are more likely to be cheaper, as well as better, if published locally. But this is not inevitable. International publishers in London can also find good Bahasa authors, as can good local publishers in neighboring countries. And it is often an open question whether design and layout experts, also necessary for publishing, are at a comparative advantage simply because they are local.

There is also the question of subject matter. Certain subjects (such as science and mathematics) "travel" better than others (such as local history or geography). Readership size is important. There is more likelihood of developing a local publishing capacity (and therefore more "infant industry" justification) with large readerships. Some nations, such as Colombia, India, and Mexico, have developed such a thriving publishing industry that books have become an export product. It would be in the interests of these developing countries to reduce protective barriers on the importation of international textbook manufacturing. To protect or not to protect is not simply a north-south issue.

The most problematic question is that of "cultural control"—the assumption that to control content, the product must originate locally. If it is a question of the quality or appropriateness of the product itself, international firms, whether in other developing countries or in industrial countries, can be responsive to demands by curriculum authorities. But sometimes the product is declared unacceptable for political reasons. The question then becomes one of expediency. If the education budget is fixed or in decline, how much of a sacrifice are locally produced materials worth? If the unit cost of a textbook is increased by 30 percent, is it worth 30 percent of the children not having access to a book?

The Advantages and Disadvantages of Copyright

Although national and international copyright provisions are an essential incentive to the production and dissemination of knowledge, they are viewed by many people in developing nations as symbols of existing international inequalities and as impediments to their acquisition of knowledge. National attitudes toward copyright change over time, however: as a nation develops its own publishing industry, it tends to view copyright provisions more favorably. Empirically, the number of nations which do not belong to an international copyright convention is decreasing, but at the same time "piracy" of books is increasing—that is, fewer nations engage in piracy, but they are doing so on a greater scale. International copyright law is extremely complex. In any international negotiations about textbook provision, developing nations should acquire specialized legal advice.

Who Pays?

In most developed and many developing nations, it is assumed without question that textbooks should be provided free to students. However, it was discovered that in many nations (including, to the surprise of many at the seminar, China) students or their parents are expected to pay for their books and that in some countries even very poor parents are willing to pay at least a small sum for textbooks. Indeed, in some nations a revolving fund or student fee is the only possible way to finance a sustainable textbook provision system. Empirically, experience with revolving funds has been mixed: some appear to be working well, others have failed. Investigation of the conditions necessary for success is warranted. However, the question of equity remains: what does one do about children whose families are so desperately poor that they cannot afford even a very modest book fee? Partial subsidization may be appro-

private. Thus, some nations successfully operate combined systems, selling or renting books in wealthier areas and providing them free in poorer regions.

The Politics of Textbook Content

Educators tend to regard their work as apolitical. This is far from the truth. Decisions about curriculum content, and therefore textbook content, frequently reflect deep-rooted political conflicts within a nation. In relatively open political systems, textbook content often represents delicate compromises among groups with different ideological positions, different religious beliefs and practices, or different ethnic and tribal backgrounds. The U.S. experience documents the pedagogical and economic difficulties this can create even in a very rich nation. Inappropriate or insensitive decisions can provoke political conflict or lead to rejection of textbooks by some groups. In one-party states, textbook content is usually carefully shaped to reflect the prevailing ideology. In such cases, sudden political shifts or changes in regimes can render suddenly obsolete a large part of a nation's stock of textbooks, requiring massive and expensive rewriting and production.

Potential Conflicts between Curriculum Developers and Textbook Publishers

Although curriculum development and textbook publishing are distinct enterprises, there is a general need for closer collaboration between them. Those responsible for curriculum development often have little idea of the cost implications of the specifications that they develop for textbooks and other teaching materials. Instances can be found in which the formal specifications for types and quantities of texts, exercise books, and so forth are way beyond what the nation could possibly afford. Frequently, specifications are laid down for book length, paper quality, book size, and type and quantity of illustrations which greatly magnify the cost of producing the textbooks or which require technology unavailable locally. Early and continuous collaboration between curriculum developers and textbook publishers is required to produce books which are both pedagogically sound and economically affordable.

Paper Supply

Contrary to what was believed a few years ago, there is no worldwide shortage of paper, nor does it appear likely that one will develop. Compared with prices for other products, paper prices over the past several years have tended to remain stable or decrease slightly. Nonetheless, developing nations frequently pay more for paper than do customers in developed nations, even after differences in shipping costs are taken into account; furthermore, there are times when certain types of paper are very difficult to find on the international market. Careful planning of paper acquisition could result in significant cost savings and so help to reduce book prices. Particularly important is to buy in large lots. Some experiments are under way with "paper buyers' clubs" to realize the savings that arise from bulk buying. Savings from such buying, however, can sometimes be squandered by increased warehousing costs or by losses due to improper warehousing. In some nations, local paper production has proven to be an economically viable alternative, but in a few cases has resulted in prices higher than those on the international market. Developed nations may be able to play a useful role in assisting with paper acquisition by jointly establishing some form of paper bank, perhaps along the lines of the Paper Support Programme financed by the Canadian International Development Agency and managed by the Canadian Organization for Development through Education.

Textbooks as Part of a Package of Interventions

Although an adequate supply of textbooks is essential for effective learning, simply placing books in schools will have little effect if teachers have not been trained how to use them and if there is a shortage of ancillary learning materials (for example, workbooks, exercise books, pencils, chalk). An effective system for providing textbooks must take into account all of the elements of a total instructional package. Beyond this, it is clear that if children learn to read effectively in school but have nothing to read when they leave school, literacy will soon decline; consequently, the investment in textbooks, and indeed much of the total national investment in education, will be lost. Programs to provide textbooks should be conceived as part of an overall "reading materials development strategy." In the words of a spokesperson from one of the nations which has successfully pursued such an overall strategy: "We have created a nation of readers." Those responsible for textbook provision systems should never lose sight of the fact that "a nation of readers" is the ultimate goal.

The Future of the Textbook

Despite claims of the more optimistic proponents of computers and other new teaching technologies, the evidence examined during the seminar (including careful studies of schools in which computers are extensively used) suggests that for the foreseeable future, textbooks will continue to be the principal mechanism for instruction. Applications will be found for com-

puters, but they will be limited compared with the use made of textbooks.

Summary

Coupled with population growth and with expanding educational opportunity, the decline in national financial resources has had a double impact on the classroom. Students are increasing in number at a time when resources per student are declining. Salaries of teachers and other educational personnel, while not lavish, are often the only part of the education budget being maintained. Decline in student resources is particularly evident in the nonsalary budget categories—in other words, just those ingredients which have proven to be most effective in the achievement of learning objectives. The availability of reading materials may be the single most consistent correlate of academic achievement, and yet the availability of reading materials appears to be the category of the educational budget most at risk. So what is to be done?

In any such fiscal or management crisis, there are basically two options. One is to generate additional resources by instituting savings elsewhere. Since increases in national revenues are unlikely and the reordering of intersectoral priorities tends to be idiosyncratic, perhaps savings can be found within current educational allocations. Can they be found within educational salaries? Can parents or communities finance a higher proportion of the revenue? Can the curriculum be narrowed down so that it includes only the most important subjects? Can the time in school be reduced or the class size increased? These are possibilities.

The other option is to seek savings within the budget category at risk. To do this requires an analysis of the way in which textbooks are conceived, developed, manufactured, and distributed. It requires that previously held assumptions—for example, about the appropriate role of the public sector—be questioned if other alternatives are less costly. It requires questioning whether local production is a necessity and whether reading materials should be distributed free. It requires that all phases of the process be open to scrutiny and professional debate.

Before such questioning occurs, agreement needs to be reached on the normal objectives of the textbook enterprise—namely, that all students should have access to effective materials which were (as far as possible) developed locally and delivered on time at an affordable cost. But there are tradeoffs within these objectives, and their implications need to be clarified.

The point is that developing countries have a scarcity of reading materials not only because of economic crisis but also because current policies toward textbook development are not always the most cost-effective. Although improvements can be made in developing and OECD countries alike, it is our contention that solutions to the crisis in educational quality in developing countries cannot be restricted to seeking resources from outside. Solutions must come from within as well as from without. This book is an exploration of the areas of textbook policy which require examination in the light of this crisis.

Notes

1. There is, moreover, some evidence that in developing countries, the quality of a primary or secondary school is a good predictor of a person's success in the labor market—substantially better, for example, than an individual's socioeconomic status. These studies, however, are too recent and too few to generalize from the results with confidence.

2. The Educational Resources Information Center system lists 388 titles published on this subject in the United States in 1977. A recent review of the evidence from low-income countries located 23 studies published between 1963 and 1977 (Husen and others 1978). A subsequent review, which made a specific effort to locate studies published in non-European languages, found a slightly higher number; see Avalos and Haddad (1981).

3. All figures are taken from background papers and discussions at the seminar on which this book is based.

4. Although they are related, the issue of whether publishing and printing should be local or international is separate from whether they should be public or private. Here we are referring only to the decision on whether to protect a local private industry. We are assuming that the public sector has already made the decision not to monopolize and that local private enterprises exist.

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Part I

The Design and Implementation of Textbook Programs: An Overview

As noted in chapter 1, the World Bank has recently become a worldwide force in developing systems to provide textbooks in the developing world. As part of its ongoing review of this work, the Bank commissioned Barbara Searle to evaluate the textbook projects in which it has been involved and to prepare an operational review of textbook programs. Chapter 2 is an edited version of that evaluation. It identifies the difficulties which have been encountered and the lessons which have been learned by Bank staff and officials of borrowing countries as they have worked together to design and implement national textbook provision systems.

Designing a satisfactory textbook program is a very complex undertaking. Many separate decisions must be made—each in itself complicated and most of them interrelated. In chapter 3, Anthony Read draws upon years of experience in designing and evaluating textbook programs in developing nations. He provides a detailed outline of each step in the chain of decisions and discusses the relative advantages of the major alternatives at each step, the kinds of information required to take sensible decisions at each step, and the ways in which different sets of decisions constrain each other. His paper is a practical planning and decisionmaking guide for those who wish to avoid the difficulties and pitfalls highlighted in chapter 2. It can be viewed as a checklist of issues, information, and decisions that must be taken into account.

Although textbook projects are internally complex and difficult to design and manage, they are also part of a broad set of educational innovations to improve educational quality. There is a considerable research literature and much practical experience regarding educational innovations generally. In chapter 4, Adriaan Verspoor draws upon that general literature, plus the experience of the World Bank in implementing educational innovations, to demonstrate how the type, size, and scale of a textbook program is constrained by the level of development of a national educational system; and how the size and scale of textbook programs constrain possible strategies for implementation. An important lesson is that although different nations require different types of textbook programs and different strategies for implementation, some form of textbook program is appropriate at all stages of educational development.

2

The Provision of Textbooks by the World Bank

Barbara Searle

Teachers and other school personnel have long recognized the important role of the textbook in providing education of good quality, and recent research has provided empirical support for this view. Altbach (1983), in reviewing crucial issues, notes:

> Nothing has ever replaced the printed word as the key element in the educational process and, as a result, textbooks are central to schooling at all levels. Yet textbooks are seldom taken into account by those who plan educational reforms or expansion of school systems . . . In situations where there is a shortage of teachers and where teacher training is sometimes limited in scope, textbooks are crucial in maintaining standards of quality and [giving] direction to the curriculum.

Textbooks began to be included in projects financed by the World Bank almost twenty years ago. Since 1973, about forty-five projects have financed some aspect of the provision of books (see tables 2-3, 2-4, and 2-5 at the end of the chapter). But the textbook enterprise has turned out to be far more complicated than envisioned, for it involves:

- Specifying learning objectives
- Establishing curriculum content and organization
- Preparing, pilot testing, and editing manuscripts
- Designing book formats
- Making decisions about paper and binding quality
- Manufacturing or procuring books
- Distributing and storing books
- Ensuring proper use of the books in the classroom
- Replacing books as necessary.

Considering the numbers of books provided, Bank financing has had a substantial impact. Most projects exceeded production targets, and in just three projects (in Ethiopia, Indonesia, and the Philippines), more than 350 million books have been printed. Many projects, however, have experienced one or more of the following shortcomings:

- An incapacity to supply books continuously
- Adequate provision for only a part of the textbook system (usually printing), and neglect for other parts of the system (such as distribution or teacher training)
- Inadequate attention to the quality and appropriateness of the books provided
- Underestimation of the difficulties associated with procurement of paper or books
- Poor distribution because of insufficient flow of information between the periphery and the center
- Inadequate institutional arrangements and system coordination

What the World Bank Has Financed

From 1965 to 1983, the World Bank helped to finance forty-eight projects involving the preparation, provision, or distribution of textbooks. Three of these—one in the Philippines and two in Indonesia—were exclusively textbook projects. In addition to these forty-eight projects, the Bank has financed activities that have had a peripheral association with textbooks: textbook feasibility studies, buildings that housed textbook offices, related technical assistance, and the production of supplementary educational materials. This chapter focuses exclusively on the core group of forty-eight textbook projects.

The proportion of textbook projects has been increasing steadily, from about 6 percent of all education projects before 1974 to 32 percent in the period 1979–83; in 1983, almost half the education projects (43 percent) included textbook components, with total costs of about

$50 million. Four regions have been responsible for almost all the textbook components: East and West Africa, Latin America and the Caribbean, and East Asia and the Pacific.[1] With the exception of the three textbook projects in the Philippines and Indonesia, textbook components have been only one component among several. Many have been relatively small—the textbook components accounted for less than 10 percent of costs in half the projects, and between 10 and 40 percent in the other half. The size of components has increased with time, but not dramatically. Almost all textbook components still represent less than 25 percent of project costs.

Grade Levels Supported

Projects have supported the provision of texts at all grade levels, but most commonly at the primary level. Most projects (thirty-seven of forty-eight) have targeted support to one level of schooling. The exceptions are mostly projects that supported institutional development rather than the provision of texts for specific subjects and grade levels; in the case of Uganda, which received a reconstruction loan, the project involved the purchase of replacement texts for the entire system. Frequently, when support is provided for only one level, no coordination is established with entities producing books for other levels.

Subcomponents

This chapter identifies seven subcomponents of projects for the provision of textbooks that have each received substantial financial support: development of manuscripts; manufacture or purchase of textbooks; distribution of textbooks; training of teachers; policy change; strengthening of institutions; and monitoring, evaluation, and special studies.

- *Development of manuscripts.* Entails writing, editing, field-testing, revising of textbook manuscripts, and development of curriculums specifically related to textbook production.
- *Manufacture or purchase of textbooks.* Includes those projects that supply only equipment or paper, as well as those that supply a wider range of items essential to the provision of books.
- *Distribution of textbooks.* Includes construction and renovation of warehouses and other storage facilities, provision of vehicles, and development of distribution systems.
- *Training of teachers.* Includes all pre- and in-service training activities for teachers and supervisors related to the use of texts.
- *Policy change.* Includes innovations in control over content (including copyright issues); regulations regarding book utilization, replacement, and conditions of use; language of instruction; book pricing and financing.
- *Strengthening of institutions.* Includes the creation of new institutions and the reorganization of existing ones, staffing, provision of specialist services, and training for technical staff.
- *Monitoring, evaluation, and studies.* Includes the development of management information systems, monitoring book utilization in classrooms and book distribution processes, evaluation of the impact of textbooks on student achievement, and assessments of systems to provide textbooks.

Projects differed widely in how many of these subcomponents they included. Ninety percent of the projects under review financed the provision of textbooks (purchase or printing), but fewer than half included teacher training, monitoring, evaluation of texts, or policy change. Half the projects that provided books also financed manuscript development and book distribution, but only half of these (eleven projects in all) financed teacher training. Only ten projects dealt explicitly with the institutional structure of the system to provide textbooks and modified it in some way.

Alternative Mechanisms for Providing Books

The objective of a system to provide textbooks is to provide books that are suitable and effective for both students and teachers on a timely and sustainable basis through mechanisms that support the growth of both new and existing ventures for publishing and selling books. Even a cursory examination of systems to provide textbooks indicates the wide variety of alternative mechanisms countries adopt to attain this objective. Here I consider some of the reasons for choosing among these alternatives.

Key Participants

The provision of textbooks involves a diversity of groups: the children and their families, teachers and other school personnel; the Ministry of Education and related institutions; the government and political organizations; private publishers, printers, and authors; and booksellers. Table 2-1 identifies major concerns of each of these groups. The effect on private publishers and booksellers, often neglected, is critical because in many developing countries textbooks provide the sales volume that supports what is usually a small market for general books.

Table 2-1. *Major Concerns of Participants in Textbook Provision*

Group	Major concerns
Students and families	Availability of books Cost (if any) Appropriateness
School personnel	Availability of books Appropriateness Ease of use Availability of support (guides, training)
Ministry	Management demands Skilled labor requirements Recurrent cost requirements Specialized equipment requirements
Government, political groups	Political acceptability of content Equity in distribution Servicing the needs of special groups
Private publishers, printers, and authors	Profitability Import restrictions Quantity of services, products needed Skilled labor requirements Specialized equipment requirements
Booksellers	Profitability Literacy rate Level of demand for general books Opportunity to sell textbooks Size of secondary market for textbooks

Source: World Bank.

The Alternatives

Table 2-2 focuses on four aspects of the provision of books: book preparation (preliminary publishing tasks), manufacturing, distribution, and financing. The table lists the major alternatives in each category and gives the frequency of occurrence in the twenty-five countries surveyed.

In most cases, book preparation was carried out either by the ministry of education (MOE) or by private publishers or by both (in that some books were prepared one way, some the other). Overwhelmingly, printing was contracted to private printers. Distribution was usually carried out or managed by the MOE. Most governments distributed books free.

Much more interesting than the commonalities, however, was the diversity of patterns in which these mechanisms were organized. For the twenty-five countries examined, there were nineteen different patterns of the four aspects under consideration. Only two patterns recurred:

- Preparation by the private sector; printing by a private firm; delivery to schools by the MOE; books fully subsidized by the government—found in the Central African Republic, the Comoros, the Solomon Islands, Tanzania, and Uganda
- Preparation of some books by the MOE, some by private publishers; private printing; delivery to schools by MOE; books produced under the project (or by the MOE) fully subsidized; others for sale—found in Brazil and Colombia.

In these latter two countries, the books financed by the project are being given to schools free, while other books must be purchased. Such a dual system also exists in Botswana and Malawi. In Paraguay, books are given free to rural schools, but students in urban schools must purchase (different) books from private publishers.

Table 2-2. *Alternatives for Implementing Textbook Provision*

Preparation	Printing	Distribution	Book financing
Ministry of Education (MOE) or within its jurisdiction (9)	Unit/department within MOE jurisdiction (4)	Delivery to schools by MOE (16)	Books completely subsidized by government (14)
Managed by MOE; part or all contracted to private sector (1)	Other government printing facility (0)	Delivery to schools managed by MOE, partially or fully contracted to private sector (3)	Books produced by project fully subsidized, others for sale (3)
Private publisher, local or foreign, without MOE participation (8)	Private printers, local or foreign (17)	Delivery to schools or outlets by or through other government agency (3)	Books produced by project partially subsidized (4)
Private publisher, local or foreign, in collaboration with MOE (1)	Combination of public and private printers (2)	Delivery to outlets for sale to individuals (1)	Books sold by government for profit (1)
Parastatal (1)	Parastatal (1)	Parastatal (1)	Books sold by publishers for profit (2)
MOE for some books, private publishers for other books (4)			

Note: Numbers in parentheses indicate how many countries, out of twenty-five, had adopted each alternative at the time of project appraisal.
Source: World Bank.

Three countries have similar systems except for organization and distribution. In El Salvador, Guatemala, and Papua New Guinea, manuscripts are prepared by a bureau associated with the MOE; books are printed by the private sector (in Papua New Guinea, printers are both local and foreign); and schools receive books free (in a ratio of one book to two students in El Salvador, one to one otherwise). In El Salvador, the ministry itself distributes books; in Guatemala, this is contracted to the private sector; and in Papua New Guinea, responsibility rests with the National Department of Works and Supply. These may appear to be minor variations on a theme. Each of these alternatives, however, poses different problems of coordination and control. In particular, the Papua New Guinea arrangement requires interministerial collaboration, which is often difficult to achieve. (The difficulty may not show up until there is a conflict of schedules—until books have to be delivered at the same time as a high-priority activity of the other ministry is expected to take place.)

Three countries have similar schemes except for cost recovery. In Benin, Burundi, and Ethiopia, all publishing and distribution is handled by the MOE or its agencies. In Burundi, books are free; in Ethiopia, students are charged a lending fee, which only partially recovers book costs; and in Benin, books are sold at slightly above cost. In Haiti and Liberia, books are sold to students at a profit: in Liberia, books are sold by the government; in Haiti, books are published and sold by local private publishers. In Haiti, the ministry purchases additional books (one for each four students) to be used by poor children in project schools. Lesotho also charges a lending fee that is meant to cover the cost of books.

These brief descriptions convey some sense of the diversity of patterns in which alternatives are combined. This diversity is an important finding because the existence of such a variety of possibilities complicates the task of designing or modifying a system to provide books.

Issues

The issues to be addressed in establishing or improving a system to provide books are legion. For purposes of discussion, it is useful to classify them into three groups: policy issues—including the choice between publishing and purchasing books, standards of provision, and book ownership and financing; institutional issues—including coordination of the system, management of resources, and staffing; and educational issues—including the language of instruction, book quality, and the effective class use of books.

Policy Issues

To Publish or Purchase. Of the tasks comprising the provision of books, those at either end of the process—the specification of learning objectives and the supervision of book use—are handled by public education agencies. For the remainder, every combination of allocation of tasks to the public or private sector occurs. A government seeking to establish or strengthen a system to provide books must decide whether to manufacture books itself or to purchase them locally or abroad. Usually the lack of adequate locally published books leads the government into the publishing business. For example, in the Philippines in the early 1970s, the local industry produced books judged to be of low quality. In response, the World Bank financed government publishing, rather than strengthening the local industry. This decision resulted in conflicts with local publishers, which the Bank is striving now to resolve.

Regardless of whether the books are published or purchased, decisions must be made about the source of manuscripts. They may be written completely by local authors, either in the public or in the private sector; written essentially by foreign authors, perhaps with minor modifications (usually changes in vocabulary and illustrations) to suit local needs; written through a collaborative process, across national boundaries, as occurred under the auspices of the Regional Organization for Central America and Panama; or written through a joint effort by a government and a foreign publisher, as is happening in Liberia, Sierra Leone, and Swaziland.

Decisions about publishing or purchasing are extremely difficult to make. Government publishing may be more or less expensive than purchasing; externally produced books may or may not be suitable: government publishing may smother private sector publishing; and so on. There is relatively little knowledge or systematically gathered comparative experience to assist governments in making these decisions.

A promising strategy for a country lacking an existing publishing capacity is to proceed in stages. The immediate need for books can be satisfied by purchases from abroad (perhaps with some adaptation) while local capacity (perhaps in collaboration with the foreign publisher) is built up to handle the variety of publishing tasks, with the possible exception of printing. Lesotho, Liberia, and Sierra Leone, with Bank support, are pursuing this strategy.

Regardless of how books are procured, the government must decide whether books are to be available through only one source (for example, bookstores or schools) or through multiple sources. In Haiti, private publishers sell books, but the government also buys and distributes them to needy children. In Sierra Leone, the project plans free distribution and use in schools as well as sales through bookstores; this will allow parents to purchase books for their children to use at home.

Standards of Provision. Decisions about provision ratios have crucial cost implications. A two to one ratio

of books to students is a highly effective cost-reduction strategy with apparently little adverse educational effect. Research in the Philippines showed that in the lower grades, student achievement was about the same for book ratios of one to one and two to one and substantially higher than for a ratio of ten to one (Heyneman, Jamison, and Montenegro 1984). Four recent Bank projects (in the Comoros, El Salvador, Philippines, and Sierra Leone) have adopted a two to one ratio on the basis of the Philippines research.

Whether a single text (for a grade and subject) is adopted or whether schools and teachers chose from a list usually depends on whether books are produced publicly or privately. The number of texts at each grade depends on the level. Few (two to three) are required at lower grades. Attempts to combine subjects in one book have generally been unsuccessful. Texts for lower grades frequently contain too much material, which is too densely arranged on the page. Evidence from research does not indicate that there is an educational payoff for elaborate production standards. When students purchase books, one year can be planned for (although books may be reused). Otherwise, the tradeoff between initial book costs and replacement costs (which includes distribution) must be considered. When books are allowed to be taken home, they provide a visible token of government support; however, book life is much shorter.

Book Ownership and Financing. The situation is clear when students purchase books privately. Otherwise rules must be established about whether books are to be given or lent to students and how loss and damage are to be handled. All combinations are possible. Students can pay book fees, yet the books can remain the property of the school. Sometimes fees are deposited in a dedicated account. Some countries have a self-defeating policy of requiring teachers to finance the replacement of books (or equipment), a substantial disincentive to their use. Other countries shift this burden to the student or, more commonly, make no provision for replacement.

Institutional Issues

Most developing countries lack trained and experienced people to run a system to provide books. Therefore, in these countries it is particularly important to establish institutional frameworks to make efficient use of these scarce human resources. Rather than several institutions, authority should be centralized in a single institution, which should supervise and schedule all tasks; allocate tasks to implementing agencies (public or private, according to their capacities to produce on schedule; and shift resources as necessary to meet schedules.

Lack of coordination is a common pitfall. It seems to occur most frequently between the development of curriculums and the preparation of manuscripts, in meshing the book procurement schedule with teacher training and supervision, and in distributing books. An effective distribution system depends on reasonably reliable transportation and a flow of accurate and timely information between schools and central authorities—both of which are very difficult to organize in many countries. Implementing a workable system is a serious challenge.

Book publishing requires many specialities. Managers must determine which tasks to contract out; how to share resources between training and technical assistance; whether to grant authors fixed fees or royalties; how to retain staff and build staff capacity; and how to structure information gathering, analysis, and use so that the organization learns from experience.

Finally, a crucial issue is the permanence and legal status of the institution providing books. Because of the institution's unique status in relation to the public and private sectors, establishing an appropriate degree of autonomy often has political implications.

Educational Issues

Key educational issues are concerned with the language of instruction and its relation to other languages used in the country, the quality and suitability of the books, and teacher capabilities leading to effective use of books in the classroom. In many countries, the instructional language is not the mother tongue of the children. This is a complex issue which requires reexamination in each particular setting. The implications for the provision of textbooks are often overlooked. Books in all subjects, and especially for teaching languages, must be appropriate to the language facility of the children using them. In countries where some children speak the language of instruction at home and others do not—for example, Ethiopia or Nepal—early language textbooks which may be suitable for the native speakers will be completely inappropriate for the others.

Another issue that is rarely raised is the suitability of the instructional strategy embodied in the textbooks under consideration. Some books are prescriptive, with highly structured text, exercises, and activities. Others are more loosely constructed, on the assumption that the teacher will use the book as a resource to be fitted into his or her own instructional program. Inadequately trained or inexperienced teachers are likely to make better use of the first type of book.

The support provided to teachers through training and supervision can be crucial in assuring the effective use of books in the classroom. If teachers have been trained to use textbooks, short sessions to familiarize them with new content may suffice; otherwise training

in how to use books will also be necessary. Teachers' editions that have on one page a copy of the student text page and suggestions to the teacher on the facing page are effective.

Two Case Studies

In this and the next section of this paper, completed projects and projects still under way are respectively considered.

A review of World Bank–sponsored textbook development suggests that the likelihood of a textbook component attaining its objectives is directly related to the extent to which the project design addresses all aspects of the system to provide textbooks. It is not crucial that a project finance every component. The analysis of the system must, however, include all aspects to make sure that the entire supporting system is in place and functioning well.

Two Bank-sponsored education projects in Indonesia and the Philippines represented major early efforts to finance textbook publishing. Each included, at least to some degree, all the important subcomponents. Both had significant successes and significant problems. The Indonesia project was approved in 1973. Its objective was to better the quality of primary education in Indonesia through an integrated program of textbooks, teachers' guides, in-service teacher training courses, and special courses to upgrade supervisory personnel. The project in the Philippines, approved three years later, had a slightly different objective: to develop the institutional capacity for the continuous development and supply of relevant textbook material in the Philippines. The difference in objectives is significant. The Philippines project was much more successful, and most of the difficulties in the Indonesian project can be traced to inadequate organizational arrangements.

Both projects exceeded their quantitative targets for printing books and training teachers; however, both projects (to differing degrees) had difficulty with institutionalization, quality of book content, physical standards of books, and coordination and scheduling.

Institutional Aspects. In Indonesia, a center was established as a separate entity within the MOE to manage the publishing activities financed by the project. The project was one of twelve to fifteen publishing entities within the ministry, and it was staffed at the senior levels with ministry personnel who had other responsibilities and were not able to give consistent attention to textbook production. (It was supposed to have full-time top managers, but these were not provided.) Almost all the remaining staff were technical. Thus there were three problems: too few staff, absence of full-time top managers, and absence of middle-level managers to direct the day-to-day work of the technical staff.

The Indonesian project recognized the need for coordination among diverse groups with an interest in textbooks. The project established a high-level committee with representatives from teacher training institutes, universities, and teachers associations as well as the ministry. The committee was expected to approve manuscripts and program plans; however, it was disbanded in the first year of the project, and its approval functions were subsequently performed by ad hoc committees. In summary, the Indonesian project, while recognizing the need to integrate textbook production and teacher training, failed to establish an entity with the authority and resources to manage this integration.

The Philippines project, by contrast, supported a much more integrated organizational arrangement for textbook production, partly because a coherent structure already existed and also because the project was approved three years after that in Indonesia and no doubt benefited from the experience gained by Bank staff there. Prior to the project, the Philippines had a Textbook Board that was responsible for approving manuscripts, which were then published by the private sector. Under the project, the board was given responsibility for managing all textbook development activities—from initial planning of textbooks through the manufacturing and distribution of books to schools—and was provided with a secretariat to carry out the work. The board was recognized as the single entity in the Philippines responsible for textbooks and was given sufficient resources to carry out its work.

The organizational differences between the projects were important. Both projects encountered similar problems with scheduling, quality control, and so on; but in the Philippines the Textbook Board (with its greater independence, staff resources, and full-time managers) was better able to diagnose and respond to the problems. As a result, performance improved significantly during the life of the project. By contrast, in Indonesia performance did not improve significantly as a result of experience gained during implementation, and despite persistent efforts, the staffing and management issues were never resolved.

Although the Philippines project made significant progress in establishing an appropriate structure, there were three problems still unresolved. First, the Textbook Board's authority did not extend to curriculum development, and there were serious mismatches between curriculum specifications and the content of textbooks produced under the project. Second, the distribution system, consisting of a central warehouse and 152 provincial warehouses, was financed with the understanding that support would be gradually assumed by regional education authorities. By the closing date, however, this had not occurred, and more than 400 field staff were still functioning on a temporary basis.

Finally, although the Textbook Board and Secretariat

(TBS) functioned well, its status and future role had not been decided by the time the project was completed. Two organizational studies recommended the transformation of the TBS into a governmental corporation to enable it to run more efficiently and effectively on a long-term basis, protected from the political atmosphere of the ministry It was expected that the TBS would be transformed into the Instructional Materials Development Corporation. But the presidential directive to establish the new body was still pending as of 1983. One particularly difficult issue that remains to be resolved is the relation of private sector publishers to the new corporation.

Quality of Book Content. Both projects struggled with the problem of producing books of good quality. They recognized the need for providing information to writers to serve as the basis for revision, but both initially misunderstood the kind of information needed and established elaborate programs for testing student achievement. The result was large amounts of data which did not provide clear guidelines to writers about what to change. In the Philippines, the TBS recognized that information was needed instead on such things as appropriateness of the reading level, adequacy of content for one full year, difficulties teachers encountered in using the textbooks, and their suggestions for improvement. As a result, the TBS substantially revised the field-testing procedures: they asked teachers to make marginal notes on an extra textbook; they interviewed teachers frequently; and they assisted teachers in sending comments to the TBS between visits. This redesigned feedback system generated information directly about specific lessons and pages and put manuscript revision back on schedule.

Another problem—that of effecting editorial improvements late in the production schedule—was solved by involving the textbook editor in the production of the book from the planning stage so that changes could be made chapter by chapter early in the writing cycle. Building on experience, the TBS was able to develop, over the years, publication criteria governing textbook content, readability, book length appropriate for the school year, legibility (including size of type, phrase grouping, word spacing), and type of illustrative material. They determined that three years was the absolute minimum time for properly producing a textbook—one year for research and preliminary writing, one year for tryout, and a year for revision and printing.

The Indonesian project was far less successful. The textbooks produced were criticized, and there is no evidence that book content and quality improved over time. Among the defects noted in Indonesian books were inappropriate levels of vocabulary and difficulty, poor integration of illustrations with written text, and inadequate teachers' manuals. The Indonesian project did not have textbook editors and did not establish effective procedures for gathering and using feedback information.

Physical Standards of Books. Difficulties with physical standards of books included problems with paper procurement, storage, and inadequate quality control procedures exercised by private printers. In the early stages of the Philippines project, printers were expected to handle the purchase of paper. Most paper was imported, however, and had to be consigned to the project to qualify for tax exemption. This system proved unworkable. As a result, paper procurement was separated from printing. In the Philippines

> TBS was totally unprepared in staff, equipment, experience, and expertise for the complex management of thousands of tons of paper shipped in from foreign ports for distribution to various printers. Further, delays in editorial and art activities and also in processing printing contracts, from bidding through evaluation, award and Bank and presidential approvals, resulted in the project's having to house up to 10,000 metric tons of paper . . . printers often complained of delays in paper releases, damaged and unusable paper released to them, shortages, or issuance of wrong stocks. The question of accountability frequently arose, as printers used more stock than estimated, claiming spoilage, and as they returned unused stock and spoilage. (World Bank Project Completion Report 1984)

Ultimately, the TBS used its own staff to supervise production work at individual printing plants.

The Indonesian project had even more severe problems. The project's preparation document did not clearly spell out technical specifications for paper weight, strength, opacity, and brightness. Nor did it have proper specifications for binding (type of wire or quality of adhesive). As a result, uncertainty prevailed about standards to be used in monitoring. Other problems were that procurement control was inadequate, inventory control was rudimentary, subcontracting by printers diluted quality control, and paper was damaged in storage.

The Philippines project seems to have been more successful at establishing quality control mechanisms, but neither project was able to solve adequately the problems of paper procurement, storage, and distribution to printers.

Coordination and Scheduling. Both projects faced severe problems with late delivery of books to schools and to teacher training programs, and both suffered mismatches between the official curriculum and book content. In Indonesia, book distribution was first the responsibility of the printer; subsequently the project

employed private distributors. These were reasonably efficient, but inadequate storage facilities at the point of delivery caused damage. The Philippines project established a network of provincial warehouses and also used commercial freight forwarders. The system for financing the transfer of books to schools was, however, ill-suited to the somewhat erratic delivery schedule (itself a result of production delays). In both countries, field visits revealed substantial mismatches between school enrollments and the number of books delivered. The TBS in the Pnilippines ultimately established its own system for collecting and maintaining enrollment data because ministry data proved inaccurate. It should be noted that both countries were up against exceptionally difficult distribution problems because they are large and comprise many islands. Perhaps the most important conclusions are that schedules should pay more heed to these difficulties and that more effort is needed to improve the efficiency of the flow of information from the periphery to the center and the flow of books in the other direction.

Late delivery to schools was not the only problem associated with distribution. Both projects at first developed schedules for teacher training on the basis of planned delivery dates for books, but book delivery was frequently late—by as much as two or three years. Indonesia maintained its schedules and trained the teachers without the books, because they wanted the teachers trained before the books reached the classrooms. The Philippines eventually took the other tack and did not train teachers until books were actually delivered to schools. This approach missed opportunities to train before use but made sure that the books were available for the training exercise.

Both projects had difficulty coordinating curriculum and book content, but the problems were better documented and analyzed in the Philippines. Among the complicating factors in that project were:

- An advisory body that was supposed to coordinate book content across subjects and grades did not function because it was not given legal status
- Manuscript development was handled by Curriculum Development Centers, which had no official connection to the Curriculum Department of the ministry
- Development of curriculums was undertaken by the ministry without any kind of coordination with textbook development and essentially in competition with the teacher training activities of the TBS.

Lessons from the Two Projects. The shortcomings reviewed here became increasingly apparent throughout the implementation of the project, as evidenced by both formal evaluation efforts and informal information gathering by project and Bank staff. As already noted, the projects differed in their ability to deal with the information. In Indonesia, no corrective action was taken because temporary staff assignments made it difficult to build on experience and part-time managers were unable to devote their attention fully to project activities and problems. The Philippines project tells a different story:

> The learning gains by project institutions involved in textbook development were considerable. By 1981, the various CDCs (Curriculum Development Centers) had identifiable working groups, counting specialists among them for research and writing. The TBS had evolved by then the basic publication criteria . . . The textbook development cycle had been tested . . . Responsibilities had been carefully delineated among authors, editors, copy editors, graphic artists, and other production specialists. The project progressively produced books, each better than that preceding it: the first book produced by the project was a straightforward, single-color elementary science book with text and simple line drawings; the last was a complex high school teacher's edition, with two-color text and full-color cover, featuring the textbook pages reproduced in facsimile and integrated with instructive material and photographs for the teacher's convenience. (World Bank Project Completion Report 1984)

The Bank's Project Completion Reports (PCRs) clearly indicate that the two project implementation organizations—the TBS in the Philippines and the project implementation unit (PIU) in Indonesia—differed in their capacity to manage change. It is evident that this difference was related directly to differences in the quality of the books they produced and in their capacity to maintain themselves as viable organizations. Beyond remarks about levels of staffing and other resources, the PCRs do not help us analyze why the TBS was a "learning organization" and the PIU was not. One can, however, speculate that, staff shortages apart, some of the crucial elements were:

- Degree of managerial competence at the outset
- The expectation that operating procedures would be codified, reviewed, and changed as necessary
- Flexibility with regard to procedures so that managers could make changes they considered necessary
- Sufficient stability of staff so that both individuals and the institution could learn from experience
- Mechanisms to upgrade the professional qualifications of staff as such needs emerged.

The PCR for the Philippines does not discuss these

elements explicitly, but the text provides clues that some, if not all, existed. In particular, it is clear that procedures were regularly reviewed and changed, that training was provided when an apparent need arose, and that at least some flexibility existed. It is also clear that some problems—for example, difficulties with distribution or inadequate coordination with the Curriculum Department of the ministry—persisted because the management of the TBS did not have the authority to take corrective action.

Conclusion

The Bank has been providing serious support for textbooks for ten years. This chapter makes clear that at least some of the early projects recognized that textbook publishing is complex and highly technical; that it requires professional competence in many specialties; and that developing a good textbook takes time (three years at a minimum). Yet even with this recognition, projects underestimated the difficulties (see table 2-3). Of the nine projects surveyed, only three (two in Ethiopia and one in the Philippines) left behind functioning systems to provide textbooks. Beyond this, the completed projects provide evidence of shortfalls in every aspect of the provision of textbooks: poor quality books, inadequate distribution systems, inability to establish and maintain production schedules, inadequate procedures for handling paper procurement, teacher training activities out of phase with book publication, poor coordination between curriculum and manuscript development, and above all, failure to establish institutions able to continue to provide good books after project completion. While ten years is a short time in Bank life and there has been, until now, no systematic attempt to summarize the project experience with textbooks, one would nevertheless expect some institutional learning so that the design of new textbook projects could address these problems more effectively. The next section examines recently appraised projects and documents both substantial improvements and continuing shortfalls in the design of projects.

Evidence from Ongoing Projects

Between 1979 and 1983, there were twenty-six projects that financed provision of textbooks for the primary or secondary levels—thirteen financing book purchases, eleven financing book publishing, and two both (see tables 2-4 and 2-5). Seventeen of the projects were approved before 1983 and therefore have at least a year or two of implementation history. Information on the projects has been gathered from appraisal reports, supervision reports, and in some cases, conversations with Bank staff.

Common Pitfalls

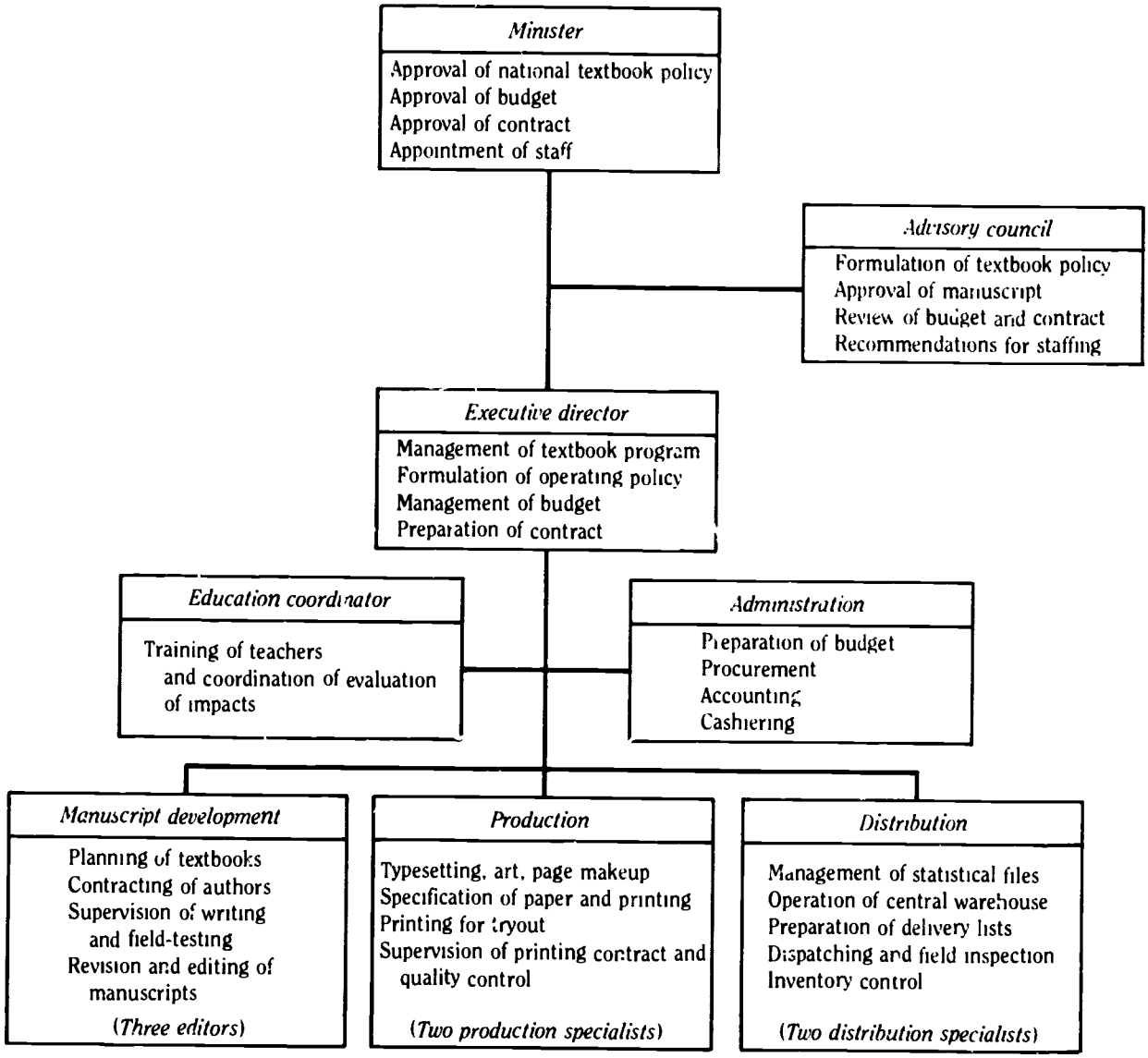
There follows a discussion of some of the more common pitfalls that the projects have come up against in the provision of books—with suggestions as to how they might be avoided, combined (where possible) with examples of helpful procedures. On the whole, projects that finance book purchases deal less well with problems than projects that finance publishing.

Failure to Provide for the Sustainable Provision of Books. Schools in the developing world are littered with odd copies of books that are the result of externally financed projects that provided books for one time only. This chapter takes the view that such an outcome is not acceptable in this period of scarce resources, that projects must aim for the sustainable provision of books. Providing books on a continuing basis requires appropriate institutional arrangements and feasible financial support. Of the projects under review, those that finance publishing are more than twice as likely to address the issue, but most projects consider either institutional arrangements or financing but not both.

Usually, sustainability is not mentioned, although one Status Appraisal Report (SAR) points out that if the government wants to ensure continued provision of books after the project ends, it will have to seek further external assistance or start charging for books. Another project, through a covenant, required the government to prepare a plan for financing textbooks after the project. According to supervision reports, the covenant is satisfied. But the report prepared by the government to satisfy the covenant provides only projections of the numbers of books needed and estimated costs. Regarding financing, it says, "a problem in accounting has arisen because, as textbooks have been paid for on the development account since the beginning of the IDA [International Development Association] textbook project, all school fees have been released for consumable items other than books, hence releasing pressure on an otherwise static income." In other words, the funds from the recurrent budget (collected as school fees) that used to be spent on texts have now been allocated elsewhere and so not even these are available for sustaining book purchase after the project ends.

The textbook component of Lesotho has addressed both the institutional and the financing issues. A Book Supply Unit has been established in the ministry which is responsible, in the short term, for purchasing and distributing books. Lesotho expects to develop its own books within a decade, and under the project the existing Instructional Materials Resource Center and the

Figure 2-1. *Organization Chart for a Textbook Agency*



existing National Curriculum Development Center are being reorganized to start on this task. By 1986, three books had been produced. Finally, a procedure for collecting book rental fees has been designed that, if successful, will make the provision of books self-supporting.

Poor Coordination of Constituent Activities. Earlier sections discussed the importance of coordinating the different pieces of a system to provide books and the variety of means countries adopt to do this. The most straightforward is to assign all the functions to a single agency. Figure 2-1 displays the organization and functions of a textbook agency similar to one being established in a Bank-financed project. In this structure, the three major functions of manuscript development, production, and distribution are under one roof, managed by an executive director. Teacher training falls within the purview of the director as well, but the mechanism for coordinating curriculum development with manuscript preparation is less well spelled out.

Poor-Quality Books. All textbooks for use in classrooms should be reviewed by experts and by teachers and should be field-tested in classrooms. The purpose of field-testing is to determine whether the books are suitable for the children who will use them—whether the language, the illustrations, and the level of difficulty are appropriate. These are judgments that are not always made satisfactorily by experts.

Perhaps field-testing of purchased books is neglected because of pressure to get books into classrooms. This may be acceptable in the short term, but a longer-term plan, even for book purchases, should survey the experience of teachers and children using the books.

Breakdowns in the Book Distribution System. Distribution failures are of at least three types: delivery of the wrong number or type of books because of inadequate information from schools or mistakes in packaging; damage to books because of the absence of storage facilities at transition points; and bottlenecks (stoppage of book flow) because of wrong assumptions or inadequate financing—for example, an assumption that district education officers will, without a budget, deliver books to schools. Projects should plan for success (by meticulously organizing the distribution system) and plan against failure (by installing a monitoring system to report to the center timely and accurate information about breakdowns).

Virtually all projects have recognized the importance of distribution, but not all have appraised the details, and fewer still have included arrangements for monitoring. Thus it seems unlikely that many in this group of projects will avoid this common pitfall.

Schedule Slippages. The problem of schedule slippage seemed to be universal in the earlier projects. Indonesia took an important step forward in allocating four years for the development of each book title, but even this has not proved adequate because the committee responsible for approving manuscripts held up the first batch for over a year. Current projects do not seem to be handling the problem much better.

Procurement Problems. The three types of procurement that cause difficulty are books, paper, and printing. Frequently the argument is made that because of their specialized nature, textbooks cannot be procured through international competitive bidding. In Sierra Leone, however, books are being procured competitively on the basis of weighted scores for six criteria: conformity to curriculum, pedagogic suitability, presentation and design, local content, production quality, and cost. The first four criteria are weighted approximately 20 percent, the last two 10 percent. Books are assessed against the first four criteria using questionnaires completed by specially trained local experts.

Paper and printing procurement are problematic chiefly because they involve many technical details, some of which are specific to regions (for example, varieties of ink and paper specifications) and about which little is known by most of the active participants—Bank staff, borrower staff, and even many publishing consultants. Bid evaluation, in particular, requires these scarce skills—but only for short periods, so that it is difficult to hire people who have them. Printing in nonstandard languages is difficult to supervise because the printing experts do not have the requisite language skills. Testing that paper, inks, and other supplies meet specifications requires both instruments and knowledge that are in short supply. Most of these problems are beyond the expertise of the Bank's procurement specialists and to date have not been dealt with systematically.

Insufficient or Poorly Organized Teacher Training. All too many projects ignore teacher training or fail to address the potential pitfall identified in the projects in Indonesia and the Philippines: namely, the (likely) circumstance that books will not be ready as scheduled. Here, above all, contingency plans are necessary so that training can be delayed until the books are available. But the SARs under review do not leave one optimistic that effective and timely teacher training will be provided to help teachers use the textbooks in ways that enhance student learning.

Project Design. Available evidence suggests two important factors of project design: whether the project has been preceded by another project supporting textbooks and whether there was a textbook expert on the appraisal mission. In this context, one can also find evidence (in the details presented in SARs) that there has been sharing of experience within regions but little between regions. Clearly, the adequacy of textbook component design could quickly be improved if regions did no more than share their experiences. But even greater improvements can be anticipated from the participation of experts, especially those from borrowing countries that have been successfully executing project textbook components.

Conclusions

This review of recently approved projects suggests the following:

- On the whole, textbook components are more thoroughly and carefully designed in these later projects than in the early projects reviewed in the last section.
- Although components that finance publishing or purchasing differ in detail, they share many potential pitfalls. Project components approved recently vary greatly in the extent to which they guard against these potential pitfalls through careful design.
- Experience, even unsuccessful experience, is a good teacher. First textbook components should not be too ambitious and should be regarded as the first

step in a long-term effort to create capacity for the provision of textbooks through either publishing or purchasing.

- The provision of textbooks is highly technical. Usually neither borrower organizations nor Bank staff have the requisite skills to ensure that the technical aspects of the provision of books are being adequately addressed. Thus consultant expertise may well be crucial.

Implementation

The seventeen projects appraised since 1979 provide a good basis for examining implementation. The textbook components, however, are covered poorly in supervision reports, making it difficult to track progress. Only six projects regularly report the number of books procured or printed.

Nevertheless, information gathered from supervision reports and from project staff suggests that most components are being implemented without substantial difficulties or delays. The following projects are exceptions:

Project	*Difficulty*
Indonesia X	The textbook approval committee took more than a year to approve manuscripts.
Philippines VII	The government has not yet established the Instructional Materials Corporation.
El Salvador IV	Difficulties were experienced with the bidding process for printing contracts.
Paraguay IV	There is a shortage of counterpart funds.
Benin II	The contract with the cofinancier is not yet signed.

Interestingly, four of these five projects are follow-on projects which were identified earlier as likely to have good design. In fact, both Indonesia X and Philippines VII took what must be considered adequate precautions against the very problems they have encountered, including getting explicit government agreement. In Indonesia, however, there was a change of minister, and in the Philippines a general law against the establishment of any new public corporation has superseded the earlier agreement regarding the establishment of the Instructional Materials Corporation. Of the five projects, only El Salvador IV is suffering from a design failure, and it is the only first effort on the list. Another commonality in the list (which may be coincidental) is that all these projects are financing publishing, not purchasing, of books.

Conclusions about Implementation. A first conclusion is that a desk study cannot give an adequate picture of how a textbook component is faring. Routine documentation available in the Bank simply does not provide enough information. Conversations with sector staff suggest that failure to document often reflects lack of knowledge; when information in supervision reports was sparse, follow-up conversations rarely provided substantially more data.

A second conclusion is that pitfalls await even well-designed components; it may even be the case that the more comprehensively the project attempts to address the provision problem, the more likely it is that difficulties will occur—because the more comprehensive the solutions, the greater the coordination required and the more high-level involvement and approval needed. Thus a serious attempt to establish a well-functioning system to provide books, particularly when it involves publishing, should be seen as a long-term effort, probably lasting a decade or more.

Recommendations

This chapter has surveyed experience with textbook components in Bank-financed projects, both those that have been completed and those still under way. The chapter has provided evidence of solid achievement and of substantial learning and increased sophistication on the part of both the Bank and its borrowers. It has also highlighted the technical and complex nature of the systems to provide books and the importance of adopting both a comprehensive and long-term perspective in project planning and design. And, finally, it has identified weaknesses and problems that need specific attention during the course of project preparation and implementation. The major recommendations arising from the study are presented here, with some discussion and justification for each.

To Publish or Purchase

The most difficult decision facing governments seeking to improve the provision of books is whether to publish books or to purchase them. I noted earlier some of the considerations that affect this decision: the level of existing publishing and printing capacity in the country, special requirements such as language, and the relative cost of books under the two possibilities. The present state of knowledge regarding the tradeoffs is, however, inadequate. Therefore:

Recommendation 1a. By sponsoring case studies and plumbing the experience of experts in the field, the Bank should gather information on the costs and benefits, both monetary and nonmonetary, of alter-

native schemes for providing books, taking into account both political considerations, such as the drive to attain self-sufficiency, and financial considerations, such as the economies of scale for book production.

In the meantime, project justifications should explicitly address the choices supported by the project. Hence:

Recommendation 1b. Alternative mechanisms for obtaining books or services (including printing—private or public, national or foreign) should be costed out, and explanations should be provided in project briefs or appraisal reports justifying the alternative chosen.

The Period of Investment

Whereas purchase arrangements must be entered into carefully, a ministry is likely to gain the necessary experience relatively quickly. Publishing new titles is quite different. As the chapter has documented, publishing is a complex enterprise. Above all, establishing appropriate institutional arrangements is difficult and lengthy. Publishing a single title takes at least three years; closer to seven or eight years is likely to elapse from initial development until the first cycle of revisions is completed. A publishing enterprise cannot be considered fully experienced until it has handled the entire cycle of development and revision. Hence:

Recommendation 2. Projects that finance the publication of textbooks where no publication capacity of this kind has existed before should plan for several follow-on projects.

Adequacy of the System to Provide Books

Many of the projects surveyed, especially (but not only) the earlier ones, financed one aspect of the provision of books but failed to achieve the ultimate objective because the system was inadequate in some other regard. Therefore:

Recommendation 3a. Preparation and appraisal of a project component that finances any aspect of the provision of textbooks should include a survey of the status of the entire system and measures to overcome important bottlenecks.

Frequently diagnosed problems include lack of coordination between the agencies responsible for different stages of the provision of books, lack of managerial authority to reallocate or otherwise marshal resources, inadequate numbers of specialist staff, and so on. Thus:

Recommendation 3b. Particular attention should be given to institutional arrangements for managing the provision of textbooks, and changes that appear necessary should be made with the government during the processing of projects.

Significant efforts at producing and distributing books have been undermined because the books were too far removed from the mandated curriculum or too difficult for students or suffered from poor paper. In consequence:

Recommendation 3c. Whether books are published privately or publicly, locally or abroad, specific attention should be given to quality control—in particular to monitoring the adequacy of book content, the quality of paper, and the adequacy of printing and binding. When necessary, appropriate corrective action should be taken.

Replicability of the Scheme to Provide Textbooks

Regardless of the funding agency, the most frequently encountered shortcoming of textbook projects is that books are produced and distributed under the project—but never again. This is not the intention, and project agreements always include clauses about the government's continuing to provide books. But repeated failures require that lending agencies become more realistic about what the provision of books entails and more cautious about what they finance. Therefore:

Recommendation 4a. Recurrent cost estimates for the proposed scheme and for its nationwide implementation for a period of at least a decade should be presented in the SAR and reviewed with the government during project processing.

Recommendation 4b. Apart from exceptional circumstances, the Bank should finance a scheme to provide books only if appraisal indicates that at the end of the period of support (which may span more than one project), the institutional arrangements will be in place, and local funding arrangements will be adequate, to continue supplying books without external support.

Several projects reviewed here financed the free distribution of texts in one region or in selected school subjects or in particular grades while the books supplied outside the project had to be purchased either by students or by schools. The SARs for these projects rarely dealt adequately with the implications of such procedures, including the cost to the government of extending the scheme beyond the selected groups or the political problems likely to arise from maintaining a dual scheme. This situation suggests that:

Recommendation 4c. The Bank should not support a dual scheme (usually free distribution only of proj-

ect-financed books) except as a transitional measure in the context of an agreed long-term, financially feasible plan.

One mechanism for assuring book replacements is to recover costs. Except for selling books on the open market, cost recovery schemes are relatively new in the countries surveyed. Experiences have been mixed. In one country, 90 percent of the books published under the project remained undist. uted because an (apparently) inappropriate cost recovery scheme had been put in place. Furthermore, collection of book-lending fees may be administratively difficult. Bank-financed projects do not yet provide evidence about cost recovery, but many in the Bank see it as an essential ingredient of a sustainable scheme to provide books. Therefore:

Recommendation 4d. The feasibility, both administrative and political, of any cost recovery scheme should be carefully assessed, and where cost recovery is to be employed, the details of the scheme should be agreed with the government.

Recommendation 4e. Projects that finance cost recovery should provide for monitoring the implementation of the scheme and for assessing its financial impact on families and on the education budget.

Table 2-3. *Summary of Completed Textbook Components*

Fiscal year	*Project*	*Targets*	*Resources provided*	*Accomplishments*	*Comments in World Bank project completion report or audit*
1965	Philippines I	Develop textbook adapted to needs of country and region	Apparently none	Textbook development did not take place	Halted because of shortage of funds
1967	Jamaica I	Prepare and test textbook adapted to local needs	None	Intended local program for textbook production not developed However, some procurement undertaken	No specific comments
1973	Thailand III	Establish a National Curriculum Development Center to design publish, and di e textbook, among other	$0 9 million (3 percent of base costs) for civil works technical assistance	New materials, including lesson plans, textbooks, supplementary readers, flip charts, and teacher's guides developed, tried before nationwide use No quantitative data provided Total of 70,000 teachers and others trained	Audit says only 'efforts at textbook production need to be strengthened '
1973	Indonesia III	Strengthen existing arrangements for preparation and testing of texts and learning aids produce and distribute 138 million textbooks, train 350,000 teachers and 28,000 supervisory personnel	$31 million (100 percent of base costs) Operating costs paper printing vehicles equipment technical ass stance	Printed 280 million books, trained 1 5 million teachers and supervisors	Textbook publishing was assigned to a pri , quality control of printing and binding was poor, pilot testing of books was inadequate problems w h distribution system The complexity of book production process was underestimated
1973	Ethiopia III	Produce 3 5 million textbooks a year by 1980	$0 95 million (9 percent of base costs) for civil works vehicles	Total of 39 million books printed, 11 million in 1980, 175 new titles, teacher training improved, new field-testing mechanisms adopted	"Adequacy of budget provided attests to government s serious commitment to textbook production
1975	Ethiopia IV	Produce revised more appropriate textbook	$1 37 million (7 percent of base costs) for operating expenses for n script development and te er training	Total of 156 new titles produced Total of 20,000 teachers attended 2-week seminars 5,000 teachers attended shorter workshops New curriculum an books used in preservice training	Curriculum development was systematic and took into account needed complementari es such as training of teachers, development of tests, and provision of physical facilities ' Revisions were made based on tryout of texts in experimental schools
1976	Liberia II	Preparation of plan for textbook production establishment of a replenishment fund book distribution system	Total of $0 72 million (13 percent of base costs) 2 man years foreign 6 man-months local specialists, 7 man-years fellowships equipment minor civil works	No progress in preparing plan, few textbooks produced preparation of plan made condition for World Bank financing of textbook in fourth project	When implementation of a component requires appropriate policy decisions such policies should be promulgated before project is launched
1977	Paraguay II.	Total of 300,000 books printed, sold	Total of $0 41 million (3 percent of base costs) 6 man-months technical assistance, paper ink, materials	Total of 300,000 books printed, 90 percent unsold no technical assistance used	(a) World Bank should have addressed distribution problem at appraisal (b) Bank should have insisted on use of technical assistance
1976	Philippines II	Develop institutional capacity for continuous development and supply of textbooks, produce and distribute 27 million textbooks, establish a national distribution system with 107 warehouses, train 250,000 teachers and supervisors	Total of $30 million (8 percent of base costs) civil works, operating costs, equipment, paper, technical assistance, vehicles	Printed 33 million books distributed 32 million, established 152 provincial warehouses, trained about 320,000 teachers, 50 000 supervisors	Problems have arisen with establishing a permanent institution for textbook provision curriculum reform and textbook production remained unsynchronized throughout the life of the project, difficulties persist with integrating the private-sector into the system, paper procurement and storage was a problem and remains so

Source World Bank

Staffing and the Use of Consultants

Project experience makes clear that the provision of books is a highly technical enterprise and that adjusting the details of project design to a particular country's circumstances is usually outside the capacity of generalists in the education sector. Therefore:

Recommendation 5a. A specialist with professional experience in the relevant aspects of the provision of books should be included in the preparation and appraisal of projects with textbook components.

Even with specialist assistance, however, sector staff will still be involved in identifying the need for textbook support and in supervising projects under way. Therefore the capacity of the staff to handle these more general functions must be increased.

Recommendation 5b. The World Bank Education Department should organize a systematic training program and prepare support materials to upgrade the capacity of sector staff involved in the provision of textbooks.

Finally, some publishing enterprises established with Bank financing have acquired substantial experience that is directly related to the problems of developing countries. The nationals who manage these enterprises have a uniquely valuable set of qualifications for advising others. Therefore:

Recommendation 5c. The Bank should make greater use of experts from developing countries who have had extensive experience with implementing textbook components in Bank-financed projects, drawing upon them as consultants for project preparation and appraisal.

Table 2-4. ***Fiscal 1979–82 Projects that Finance Provision of Primary and Secondary Textbooks***

Fiscal year	*Project*	*Targets*	*Resources*	*Accomplishments*	*Comments and problems*
1979	Malawi III	Provide 2.2 million textbooks over three years.	$3.32 million (16 percent of base costs) for purchase of books from local.	As of March 1984, most students were reported to have textbooks.	As requested, the borrower prepared a "plan for financing textbooks after the project." The plan gives only projected costs, however, and does not indicate *how* the government will cover these costs.
1979	Swaziland III	Produce and distribute 1.1 million textbooks and 78,000 teacher's guides to 110,000 primary school students over four years.	Total of $0.66 million (5% of base costs) for publishing of books by local national publishing house under an agreement with a private international publisher, and distribution. (Teacher in-service training would be financed by alternative mechanism.)	As of December 1983, 70 percent of textbooks had been distributed.	The borrower is expected to prepare a plan for financing textbooks after the project is complete. This covenant has not yet been complied with.
1979	Pakistan IV	Provide about 150,000 textbooks and teacher's guides to selected target areas over 1–3 years.	Total of $0.4 million (37 percent of base costs) for local purchase of textbooks.	As of September 1983, 45 percent of books had been procured.	Neither SAR nor supervision reports provide details about where books come from. They are a small component of a large experiment in primary school reform.

(Table continues on page 32.)

Table 2-4 ***(Continued)***

Fiscal year	*Project*	*Targets*	*Resources*	*Accomplishments*	*Comments and problems*
1979	El Salvador IV	Provide adequate facilities for the Textbook Division of Ministry of Education; produce and distribute about 1 million texts and teaching guides over four years. Train teachers in their use. Evaluate the effect of inputs on student performance.	Total of $3 million (12 percent of base costs) for civil works, equipment, furniture, technical assistance, and operating costs.	As of December 1983, plans for interior of textbook building had been reviewed. Construction was scheduled to start January 1984. Printing of textbooks had not yet started because of problems preparing bidding documents.	Slow progress is due to lack of organizational and managerial experience in textbook unit. Because of complicated procedures, only two of seventeen printing firms eventually submitted bids. Coordination between PIU and other project weak. U.S. Agency for International Development is financing primary school textbook independently. Coordination between the two recently established.
1980	Brazil IV	Produce and distribute about 4.8 million textbooks, workbooks, and teacher's guides and about 2 million teaching/learning materials packages over four years; strengthen school and teacher supervision system.	Total of $11.7 million (17.5 percent of base costs). No breakdown of expenses presented in SAR. Funds can be used by states to develop and print books or to purchase these from FENAME (Federal Learning Materials Agency).	As of February 1984, about 41 percent of books produced had been distributed. Percentage of target reached, by state, ranged from 8 to 17 percent.	Supervision reports do not describe how books are being procured, whether requirements for field-testing are being met, what roles states and FENAME are playing in procurement.
1980	Bangladesh IV	Supply books to students.	Total of $3.5 million (9.8 percent of base costs) for book purchase.	As of October 1983, 1.2 million books had been distributed.	
1981	Papua New Guinea II	Develop an institutional capacity for continuous supply of textbooks; prepare, field-test, print, and distribute about 0.5 million textbooks over seven years.	Total of $5.4 million, which includes related components (16.8 percent of base costs) for civil works, furniture, equipment, paper/printing, and technical assistance.	As of December 1984, manuscripts for field trial were under preparation; writing teams had been organized and moved into new facilities; detailed production plan had been prepared.	Some staffing problems still exist; production schedule delayed by difficulties created by move.
1981	Philippines VII (sector loan)	Establish the Instructional Materials Development Corporation (IMDC) as the successor to the Textbook Agency; produce and distribute 110 million textbooks over	Total of $18.4 million plus paper costs (6 percent of base costs) for operating costs and materials, civil works for provincial warehouses.	As of November 1983, plans were under way for warehouse construction; 7 million books were printed and distributed in 1982.	Delay in establishing IMDC because of conflict with presidential decree banning new government corporations.

Table 2-4 *(Continued)*

Fiscal year	Project	Targets	Resources	Accomplishments	Comments and problems
		10 years (time slice financed by World Bank); improve distribution system.			
1981	Paraguay IV	Print and distribute about 230,000 primary textbooks and about 85,000 syllabuses and guides for primary and secondary teachers over about three years; prepare manuscripts for lower secondary textbooks	Total of $0.54 million (3 percent of base costs) for materials and technical assistance.	As of November 1983, curriculum and textbook manuscripts had been developed as planned and paper procured. Prequalification of printing firms was under way. Consultant in textbooks was in place.	Implementation of entire project behind schedule because of lack of counterpart funds. Printing contracts cannot be awarded until funds available
1981	Ethiopia V	Provide adequate facilities for National Curriculum Development Center; field-test manuscripts and prepare prototype materials for ten subject areas over three years.	Total of $2.5 million (6 percent of base costs) for civil works, equipment, furniture, and operating costs.	As of October 1983, civil works and field-testing program were proceeding according to schedule.	This project builds on earlier projects that have helped develop a government capability for meeting Ethiopia's textbook needs. Most of the important developments occurred in earlier projects.
1981	Lesotho III	Establish a permanent textbook supply infrastructure; purchase and distribute about 1.9 million books over four years.	Total of $2.63 million (28 percent of base costs) for purchase and distribution of textbooks and about $0.25 million for technical assistance. As of October 1983, civil works, field-testing program proceeding according to schedule.	As of December 1983, regulations for the establishment and operation of the Book Supply Unit were finalized; policy statement prepared; revolving fund established; pilot phase complete (90 percent of fees collected); lockers distributed nationwide, nationwide book distribution under way.	Nationwide implementation was preceded by a pilot phase in one district. Many potential problems were identified and solved. Enrollments in pilot district grew faster than predicted (7–14 percent rather than 2–3 percent), perhaps because cost of books was lower. Some teachers, however, asked students to purchase additional books.
1981	Tanzania	Provide textbooks and other teaching materials to sixteen rural districts (about 448,000 pupils); improve the system for distributing school materials.	Total of $4 million (includes furniture) for purchase of books; $3.5 million for civil works, furniture, equipment, vehicles, technical assistance for improving distribution system (19 percent of base costs).	As of December 1983 procurement of educational materials was proceeding satisfactorily. Warehouse had not been built.	Project is two years behind schedule because of lack of funds. It is being restructured. Warehouses will probably be retained, but reduced in scale.

(Table continues on page 34.)

Table 2-4 *(Continued)*

Fiscal year	*Project*	*Targets*	*Resources*	*Accomplishments*	*Comments and problems*
1982	Botswana III	Provide 200,000 textbooks and teacher's guides over five years.	Total of $0.5 million (2 percent of base costs) for purchase of books.	As of December 1983, procurement of about half the books had been approved.	Consultant advice on book tendering is being sought.
1982	Comoros I	Provision of about 59,000 textbooks, (one book for each two students), 4,000 teacher's guides, and 235,000 workbooks, over five years; 100,000 workbooks would be prepared locally.	Total of $0.57 million (12 percent of base costs) for purchase of books, paper, and printing materials.	As of February 1984, about half the books had been ordered, and procurement of the remainder was under way. Local production of workbooks was to begin soon.	Consultant advice on book tendering is being sought. The French are financing a substantial portion of the textbook procurement.
1982	Benin II	Produce and distribute about 970,000 textbooks and teacher's guides per year. Establish the textbook unit as a legal entity.	Total of $3.54 million (16 percent of base costs) for construction, furniture, equipment, and consumable materials to establish a print shop; technical assistance and salary allowances and fellowships; construction, furniture, and equipment for warehouses.	As of December 1983, manuscript preparation was under way; six manuscripts were being field-tested, and four were being prepared. The textbook unit had been officially established as the Centre National de Manuels Scolaires.	The textbook component will be financed by the German government, but the agreement has not yet been signed.
1982	Indonesia X	Strengthen the Integrated Textbook Project (ITP) as a permanent organization; strengthen curriculum development center; develop or revise 112 manuscripts. Print and distribute 82 million textbooks over five and a half years.	Total of $80 million (100 percent of base costs) for manuscript preparation, book manufactur (including paper and printing), distribution (including warehouses), monitoring, evaluation, and studies.	As of April 1984, 29 manuscripts had been prepared; government had established the ITP as a permanent organization within the education ministry.	Approval of manuscripts by the Coordinating Committee on Textbooks delayed over a year. Hence, printing not possible and books will not begin to flow to classrooms until 1985.
1982	Solomon Islands I	Purchase 150,000 textbooks and teacher's guides, and supplementary teaching materials, over five years.	Total of $0.4 million (6 percent of base costs) for book purchase.	As of March 1984, about 20,000 books, also dictionaries and atlases, had been ordered. Remaining procurement was to occur after curriculum review.	Remainder of procurement not expected to begin until after July 1985.

Source: World Bank.

Table 2-5. *Fiscal 1983 Projects with Textbook Components*

Project	*Targets*	*Resources*
Burundi III	Produce 800,000 textbooks, 120,000 teacher's guides; upgrade printing.	Total of $1.95 million (13 percent of base costs) for paper, printing materials, equipment, and vehicles.
Uganda III	Replace primary and secondary books; quantities to be established to provide balance among subjects and text, auxiliary and library books.	Total of $9.1 million (31 percent of base costs) for book purchase.
Central African Republic II	Supply books, guides to 54,000 students and 800 teachers.	Financing for book purchase: costs for textbook components not broken down in SAR.
Guinea II	Print 1.2 million textbooks and teacher's guides.	Financing for civil works, furniture, equipment, consumable materials, specialist services, fellowships, and incremental operating costs for textbook components not broken down in SAR.
Liberia IV	Establish a national textbook program. Purchase and sell to students about 1.8 million textbooks.	Total of $2.9 million (15 percent of base costs) for book purchase and distribution.
Sierra Leone III	Procure and distribute about 1.3 million texts and teacher's guides; establish a task force to manage textbook provision.	Total of $2.0 million (9.8 percent of base costs) for civil works, specialist services, book purchases.
Colombia V (subsector project)	Provide about 0.3 million textbooks to all schools qualifying for assistance under sector project.	Total of $0.98 million (3.5 percent of base costs) for purchase of existing local books.
Guatemala III	Develop an institutional capacity for textbook production and distribution; produce and distribute about 6 million texts, workbooks, and teacher's guides over five years.	Total of $8.5 million (37 percent of base costs) for book development, paper, distribution, teacher training and civil works, equipment, and specialist services.
Haiti III	Produce and distribute about 3 million texts and workbooks.	Total of $0.8 million (10.8 percent of base costs) for development costs including staff, specialist services, equipment, materials, and operating costs.

Source. World Bank.

Note

1. Most of the countries in North Africa and the Middle East have established relations with European publishers which produce books adapted to local requirements. Quite recently, some Middle Eastern countries—for example, the Yemen Arab Republic and the People's Democratic Republic of Yemen—have opted to develop their own textbooks, and the latest project is financing part of this effort.

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The Design of Textbook Projects

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The experience of the World Bank outlined in the previous chapter, as well as the experiences of many other national textbook development programs and projects, clearly demonstrates the need to plan very carefully across a wide range of technical and policy issues if one is to avoid the common pitfalls and problems of designing textbook projects. This chapter is a detailed practical planning and decisionmaking guide. It starts by discussing preparation for project design and then analyzes institutional and management capacity, book development, book production, and book use. For each of these major steps in the decision chain, it briefly outlines the salient policy issues and technical considerations, the main alternatives available, the advantages and disadvantages of each, and the information required to make informed choices among them. The chapter can be read as an extensively annotated checklist of the elements which must be considered in designing a system to provide textbooks.

Preparation for Project Design

Essential preparation for the design of a textbook project includes consideration of the environment, establishment of clear agreement on policy issues, collection of essential statistical information, and appraisal of the existing textbook provision system.

Environment

Rainy seasons affect distribution schedules, the choice of transportation, storage requirements, and even on occasion the timetable of the school year. A severe rainy season immediately before school opening (as, for example, in Sierra Leone) poses a problem when books have to be moved up-country to rural areas in preparation for the opening.

Humidity, dust, and proximity to salt water can affect the operation of printing equipment. Book storage at central, district, and school levels should be designed with three problems in mind: dust (as in Burkina Faso and Niger); humidity, which can cause fungal damage unless adequate ventilation is provided; and dampness, which is a major cause of book destruction.

Insects frequently attack paper and are attracted to some kinds of glue. The correct choice and treatment of raw materials and the choice of design features and manufacturing processes are thus very important. Termites are a major problem in some areas (for example, Ghana), and although there are chemical treatments available, the best solution is good warehouse management, including the frequent cleaning and moving of book stock.

Topographical features—such as river crossings, islands, and mountains—and transportation networks determine the choice of warehouse locations and the nature of a distribution system. In Indonesia, for example, the large number of islands and the difficult access cause special problems.

Policy Issues

The choice of language for the texts, funding, and textbook requirements are issues on which clear agreement as to policy must be established. Legal issues related to copyright and contract should also be carefully considered.

Choice of Language. The choice of language will be affected by decisions related to the language of instruction. These decisions will be determined by political, cultural, pedagogic, economic, and sometimes technical criteria. Political and cultural issues are internal to government and are not necessarily a direct concern of a textbook project. Nevertheless, government prefer-

ences must be recognized and taken into consideration at the earliest possible stage.

Learning is most effective in a mother tongue. In a multilingual situation, however, there will probably be a need at some point to switch from the mother tongue to a more widely accepted language of instruction. The pedagogic, financial, and organizational problems associated with this should be taken into account.

Except where individual language groups are large enough to carry the cost of textbooks economically, single-language production is cheaper than multilingual production. Each language edition has to be individually typeset and incurs additional film and plate charges. This is less significant for highly illustrated books: at the lower primary level, for example, one set of illustrations can normally serve for all language variants, and the proportion of text to illustrations is usually low. But where there are widely differing cultural backgrounds—for example, Islamic and Christian—illustrations may not carry across to different editions, increasing artwork costs substantially.

Other cost factors favoring single-language production include size of print run, authorship costs (either unique language authorship or translation), editorial costs, and warehouse and distribution requirements.

The conclusion to be drawn is that whereas mother tongue editions of textbooks are usually preferable on pedagogic grounds, they can create—if there are several different editions involved—economic, technical, and management problems which are particularly severe in low-income, heterogeneous countries with underdeveloped educational and publishing infrastructures and small populations (for example, Guinea). But these problems are not necessarily inhibiting when language groups are large (as in India and Nigeria).

Possible compromises for small countries may mean mother tongue editions in lower primary grades only or a reduction in design and production standards; or a higher cost of books may simply be accepted as necessary to implement a mother tongue policy.

Funding. The provision of textbooks may be funded in four ways: by the ministry of education (MOE), by commercial outlets, indirectly by loan fees, or as part of school fees. Mixed funding is both possible and common. Parents may purchase books from the MOE at subsidized prices. Or elementary schoolbooks may be provided free and secondary books purchased by parents.

There are a number of problems associated with MOE funding. Financial resources available for textbooks can vary widely from year to year, so that book supply can be unreliable. MOE funding may be too limited to supply a whole system. Only a token number of books may be supplied to each school, and supplies may be limited to particular locations. Purchases and subsidies can be limited by grade or by subject.

Distribution, storage, management, supervision, and transport may be neglected because MOE funding is concentrated on book purchase and subsidy. The result is that books are available but are not distributed. In the midst of an acute textbook shortage, Sierra Leone had quantities of books deteriorating in storehouses for want of an effective distribution mechanism.

Textbook costs can sometimes be so high that the MOE cannot provide adequate quantities or parents enough money to purchase them. Book costs may be high for a number of reasons. The content and design specification may be too sophisticated. The production specification may be too ambitious—too many pages, too much color, or an unnecessarily high quality of paper.

High costs may result from too much choice among many titles, so that economies of scale in bulk purchase and large print runs are lost. High costs are also incurred by poor management of production—usually but not necessarily associated with locally published and manufactured titles. Poor management of procurement of commercially produced titles and high profit margins can also result in expensive books.

Frequently no provision is made by the MOE for regular book funding, even where income is generated from book sales, loan charges, or school fees. Income thus generated may be used for other purposes. In Latin America, however, textbook projects have been designed to include legislative provision for minimum levels of funding for books and materials.

The basic funding objectives of any textbook project should be to keep prices down and to move toward continuity of provision. Prices should be kept down as far as is consistent with predetermined standards of editorial and production quality. This can be achieved by appropriate selection criteria (of which price should be a significant feature), sensible quality specifications, and professional procurement and production management. As regards continuity of provision, if ministry financing is unreliable, continuity can be achieved only by some form of specifically protected revolving fund.

Many textbook projects require some form of importation—finished books, raw materials, or film. Projects cannot work unless specific provision is made for this requirement by the project or the government in the form of foreign exchange allocations. Postproject continuity requires long-term recognition of this requirement.

In Liberia, an International Development Association (IDA) project reduced textbook prices by approximately 50 percent—but even so, prices were still beyond the reach of most parents. Prices must be calculated in terms of price per student per year for *all* books required in a grade—not as prices per book. For example, a

parent may be able to afford $5.00 a year for all books but not six books at $5.00 each. The average cost per pupil per year to provide five textbooks in Sierra Leone was approximately $0.75 in 1985. Market research on acceptable prices—particularly in rural and poor urban areas—is an absolute prerequisite for the identification of production specifications, formulation of funding policy, all "parent purchase" type projects, and any revolving fund operation.

A revolving fund is a system whereby income generated from MOE book provision plans is used to fund future book requirements and cannot be used for any other purpose. The income should be sufficient to cover the costs of purchase or production (and freight), procurement, distribution, accounting, supervision, and management. It should also take account of depreciation, inflation, and likely replacement costs. Thus retail prices, fees, and loan charges can only be fixed once realistic estimates of these costs have been made.

Loan charges or school fees can be calculated to recoup costs over a two-, three-, or four-year period, depending on estimates of book life and replacement policies. These in turn are related directly to production specifications and to distribution and storage facilities. The cost of books sold to parents must be recouped in full because the MOE cannot reissue or resell them in the following year. Book sales do, however, create secondhand book markets which reduce costs to parents.

There are a number of common difficulties with revolving funds. Prices and fees may be incorrectly calculated to cover costs. In Liberia, for example, prices were cut because books were too expensive, but income was then insufficient to maintain the fund. Sales (and thus income) may be overestimated and be insufficient to cover the cost of purchases. Stock remaining unsold is thus a loss to the fund. Parental purchasing and fee-paying ability may be overestimated—because books are too expensive or too many books are prescribed per grade. Sales may be lost and no income accrue to the revolving fund because poor distribution has kept books from arriving at the point of sale. Poor cash collection, especially in rural areas, can be a major problem. Other problems include stolen, lost, or damaged books, bad debts, and school fees which are stolen. And sometimes the revolving fund is used for purposes other than book purchase.

Revolving funds (which can also be extended to materials such as pencils and paper) work best when they are tested and established on a small scale first. Revolving funds based on sales income are frankly commercial operations, requiring high-level skills in promotion, sales, distribution, cash collection, accounting, and management. Revolving funds based on fee collection require no entrepreneurial skills and are generally more straightforward to operate. In both cases, the cost to the consumer is the major limiting factor and must be carefully considered and calculated.

Textbook requirements. At the primary level, a book-student ratio of 1:2 for course books produces economic savings for poorer countries without drastically affecting achievement. For reading texts, a ratio of 1:4 to 1:6 has been chosen in some countries (Sierra Leone), with decreasing ratios at the upper primary level. Reference books such as dictionaries and atlases can be provided at minimum levels of one or two per class at lower primary levels, rising to four or five per class at top primary levels. Ratios of more than one textbook to three students present usage problems. Three students can have a reasonable view of a book simultaneously; four cannot. At the secondary level, there is no available evidence on minimum ratio requirements. There is, however, a widespread assumption that 1:1 ratios are desirable and necessary. Books distributed by a ministry can better achieve desired book-student ratios. Commercial sales by and large cannot, for the ratios are then a matter of the effectiveness of sales penetration.

Where teachers' manuals are produced, it is important that copies are available for every teacher, for teacher training institutes, for inspectors, and for subject advisory staff. Many projects based on parental purchase of books make provision for teachers' manuals to be provided free to teachers, teacher trainers, and inspectors. Regardless of book shortage, efforts should be made to ensure that every teacher has a copy of all the students' and teachers' books recommended or prescribed for his or her grade or subject.

Textbook replacement varies according to production standards, environmental conditions, and storage arrangements. Assuming that adequate production standards have been achieved and that students and teachers have been given basic information on book care, a student's book in tropical Africa would reasonably last three years if loaned and perhaps longer if purchased by the student. Loss, accidental damage, and theft are significant, however. Sierra Leone and Burkina Faso are both working on a 30 percent replacement allowance over three years. Replacement allowances are usually much lower in parental purchase projects because parents are unwilling to buy a book twice if it is lost or damaged. Making teachers financially responsible for replacing lost or damaged copies has led to severe underuse of textbooks, even when adequately provided (as in Indonesia). This practice is therefore not recommended.

Other criteria for deciding the suitability of textbooks include conformity to curriculums, pedagogic suitability for local conditions, the level of content, and the attractiveness of design.

Legal Issues. Copyright is a complex and frequently emotional issue involving concepts of ownership and exploitation rights. For a brief introduction, see de Freitas (1984). The existence of adequate local copyright legislation could affect the contractual relationship between the author and the MOE in a local publishing project and between the MOE and the local or foreign publisher in a joint publishing venture; it could also affect the ability to exploit financially a successful local or foreign publication.

Contracts involving copyright and publication rights *always* need scrutiny by a professional. This does not necessarily mean a government legal department: wherever possible, lawyers specializing in copyright matters should be used. Agreements on matters such as procurement, printing, and distribution are usually less problematic, but if possible professional advice should be sought.

Statistical Information

Statistical information is needed to establish print runs, distribution schedules, transportation networks, warehouse location, storage in schools, and systems for inspection, supervision, and management. For any textbook or education project, it is essential to collect statistical information on student enrollment by class, age, sex, and by the smallest available administrative subdivision. Growth rates in enrollment levels over a reasonable base period and the proportion of the available or target catchment population actually enrolled are also essential. Future projections must be based on past evidence, on agreed governmental assumptions about the future development of the school (and school-age) population, and on agreed targets.

Information is required about the numbers, sizes, and types of school; their religious denomination; and whether they are public or private, main or feeder. Their locations should also be recorded in terms of time and distance. Information should also be collected about schools that are difficult to reach. Schools that are accessible by head porterage or canoe only, or those cut off by rains at key distribution periods, must be identified—and at the district rather than central government level.

False or incomplete declarations at school and district or provincial levels and incomplete compilation mean that much educational statistical information from underdeveloped systems is very inaccurate. This can also be due to poorly structured questionnaires and to the extrapolation of statistics from old and out-of-date information. Sometimes no reliable information is available. A simple school visit questionnaire can be used to compile a subjective view of the system and to check the accuracy of much statistical information.

Textbooks distributed by the MOE are frequently ordered and delivered on the basis of information provided by the system. A normal channel for statistical information on book requirements would be as follows: The school prepares schedules of the requirements. These are collated at the district level and passed to the regional office, where they are collated and passed to the central office. Having been collated at the central office, they are adjusted for available funds and supplies, and the books are then ordered and supplied. All the steps up to ordering and supplying the books can be efficiently performed in a few months but do depend on a well-managed school system with adequate communications. The sequence described above can equally take several years to operate and still provide distorted information.

Demand-inspired book provision occurs where the MOE identifies class by class the requirements of every school and attempts to satisfy these precise demands. It is effective only if the information provided is accurate, fast, reliable, and repeatable year after year—and if the system has sufficient money to meet requirements. Frequently the cost of discovering demand so precisely is very high, and the information is returned so slowly that the demand pattern has changed when the supplies actually arrive.

Supply-inspired book provision is based on sensible estimates of requirements by the central office, target ratios agreed to by the MOE, and available finances; it is usually adjusted annually on simple feedback from the district office. It is easier to operate, manage, and maintain, and it has not been demonstrated to be substantially less effective—particularly in systems without the finances to maintain full supplies. In simple terms, this approach does not attempt to meet actual demand but concentrates on equitable distribution of what can realistically be supplied.

Existing Systems to Provide Books

An evaluation of the system to provide books in operation before the launching of a textbook project is essential as a foundation for any future decisions on new or upgraded systems. Key information required comprises book titles in use at each grade; method, procedure, and criteria for selecting books; the origin of titles in use; and the method of distribution and funding. Information on the method of selection should indicate whether there is free choice or a list recommended or prescribed by the MOE. (See section below on selection, distribution, and storage.)

There are four broad categories of selection procedure: commercial submission to an institutionalized selection system, lobbying, MOE publication (where there is no choice), and tendering. The origin of titles in use

may be state publication, local commercial publication, imported commercial publication, or a mix of state and commercial copublication. Information on the method of distribution should show whether this occurs through the commercial book trade or through direct distribution by the MOE or other government agency.

If funding is based on parental purchase, there is a need to know whether supply is from booksellers or from the MOE, what the costs to the parents are, and whether there is any subsidy. Information is also required as to whether the network of outlets gives sufficient geographical coverage and whether prices are geographically uniform and acceptable.

Free MOE distribution may take several routes: direct from central warehouse to school, from central warehouse via district warehouse to school, or from central via provincial and then district warehouse to the school. Information on storage arrangements should differentiate between books owned and maintained by students and those owned and maintained by the MOE.

It is important to identify actual as well as official figures relating to book-student ratios and book life. The coverage of the system should give the number of copies of each title distributed and available as well as the proportion of market coverage targeted and achieved. Gaps in coverage should be noted by reference to subject, level, area, or socioeconomic group.

In relation to parent purchase, prices should be assessed by reference to the average retail price per grade and the total retail price per student per grade. Estimated target prices considered affordable should also be known.

Institutions and Management Capacity

The Ministry of Education

Within a ministry of education, management functions are frequently spread over different departments and divisions. Understanding how these departments are interrelated and identifying the precise location of each function is essential if a project's management structure is to take account of the complexities. Important in textbook projects is the management of geographic areas, levels of education, and subjects, together with curriculum development. Equally important are the functions of the inspectors, particularly those related to procurement and storage, distribution, and accounts

Management of geographic areas is frequently scaled out via regional or provincial and district or even subdistrict offices. Responsibilities are usually administrative but could include distribution, transportation, fee collection, teacher supervision and inspection, building maintenance, and statistics collection.

As regards levels of education, ministries are often divided into primary (elementary), secondary (high school), and higher education (college and university) sections. These sections may be interrelated with geographic management or may be virtually separate. Responsibilities could include teacher training, recruitment and employment, curriculum development, publications, recommendation or prescription, purchase of materials, inspection of teachers, and building maintenance.

Subject management can be part of level management or separate (if there is a separate curriculum development department). Responsibilities could include supervision, teacher training, curriculum development, selection and purchase of materials, or staff development.

Procurement and storage can sometimes be outside the MOE completely. At least one textbook project has run into problems because it failed to spot that book procurement was not a function of the ministry with which it was working and accidentally created two parallel and competing systems. Distribution and transportation can also be in another ministry.

Related Institutions

Ministries other than the MOE may have considerable impact on policy development. Only specific country experience can provide answers, but the common sources of external policy influence are as follows. Information on policy related to budgets, the availability of finance, and foreign exchange allocation should be sought from the ministry of finance and central bank. The ministry of trade can provide information on tariffs and duties. Political party officers are engaged in lobbying for constituency preferences. Religious agencies are often responsible for a significant proportion of school funding and management. University departments of education are frequently outside the authority of the MOE but are sometimes responsible for secondary teacher training and for curriculum development. Other aid agencies may be financing alternative textbook projects or projects which may be related to textbook provision (for example, the U.S. Agency for International Development, International Efficiency of Learning in Liberia, the Unesco (United Nations Educational, Scientific, and Cultural Organization) Bunumbu project in Sierra Leone, the Educational Development Foundation in Uganda, the Canadian International Development Agency in Liberia and Uganda, and the Swedish International Development Agency in Tanzania). The views of parents, of parent-teacher organizations, and of village and tribal

and ethnic associations should also be assessed. The timing of the school year can often be related to external examination dates. The interrelation of curriculum and examinations should be taken into account by reference to examination boards and systems.

Administrative Effectiveness of the MOE

Evaluating whether an MOE is capable of taking on and running a complex management activity such as a textbook project is always necessary even when a special textbook unit is proposed—because that unit will still have to use the existing systems of the MOE. Thus the management effectiveness of the MOE has to be assessed in terms of its resources (including staffing), organizational structures, management systems and procedures, and inspectors and supervision.

Resources. Budgetary provision for staffing buildings and maintenance, equipment and vehicles, supplies, inspection, and supervision should be assessed. Because salaries are usually the last elements in the budget to be cut back, if a growing proportion of an educational system's total budget is being spent on salaries, it is usually a clear indication that the system is coming under financial pressure. Similarly, a lack of transportation facilities and traveling expenses that are delayed or seldom allowed are frequently signs of the ineffective operation of the system. The physical mobility of the inspectors is vital both in the supervision of the system and in the implementation of a textbook project.

Institutional memory is critical to the success of a textbook project. The qualifications, training, experience, commitment, and permanence of key staff are therefore all crucial elements. Two key ratios in the classroom should be noted: the number of students per teacher and the proportion of untrained to trained teachers in the system. There is an increasing disposition in many countries to allow student-teacher ratios to rise to a level of about forty-five students per teacher. In situations where there are significantly high student-teacher ratios or where the number of untrained teachers in the system is increasing, the quality and the regularity of inspection, supervision, and the delivery of supplies are crucial in maintaining the effectiveness of the system.

Management Systems and Procedures. The effectiveness of the MOE can be judged by its control of finance and resources and the way in which it responds to construction or maintenance needs. Clearly, basic statistical information, which should already exist in the system, must be up-to-date and accurate.

The effectiveness of the MOE's monitoring and control of finance, the process of budgetary formation, and the cash collection systems should be assessed. Senior line managers' knowledge of the quantity and whereabouts of physical supplies and equipment is an important gauge of resource control. Effective management also demands a clear knowledge of school and classroom conditions and outstanding maintenance requests. There should be a system for prioritizing construction decisions.

Inspectors and Supervision. The inspectors should have clearly defined job descriptions and terms of reference, and the split between pedagogic support and school and classroom management needs to be specified. It will be necessary to determine whether there is a clearly stated and operable system of school and classroom management covering attendance, student records, stock and supplies, cash transactions, and school history. The collection of such information will demand regular visiting of the system, even at the most distant and isolated points, and will require in turn sufficient qualified staff.

If there are substantial areas of deficiency—for example, lack of classroom management systems—the textbook project must make provision for the basic upgrading of this deficiency before implementation. There is, after all, no point in providing relatively expensive resources if they cannot be adequately looked after, managed, and used in the classroom situation.

Curriculum and Syllabus. The existence, age, and relevance of curriculum and syllabus should be checked and qualitatively assessed. Pedagogic requirements should coincide with existing expertise in the classroom. Content should be satisfactorily covered in the time allocated. The curriculum may be in the process of revision or updating or there may be more than one curriculum. The project should ensure that it is concerned with the correct curriculum.

The School. The project needs to assess the school management system, the staff, and the school's contact with the inspectors, the district office, and headquarters. The physical condition of the school and factors such as weatherproofing, storage facilities, security, and accessibility all need attention. The number and adequacy of desks, chairs and benches, blackboards, and (in secondary schools) laboratory equipment are all important elements. (The average desk-top space per child can affect the design of textbook format, so that school furniture has implications for both book design and pedagogy.) Clearly, the availability of basic resources and equipment—textbooks, armboards, paper, pencils,

chalk, exercise books, and (in secondary schools) chemicals and apparatus—must be noted.

Information concerning the training, qualifications, and experience of staff is necessary to assess the pedagogic practicability of materials. Staff-student ratios should be noted, together with attendance and admission records.

Contact with the inspectors, district office, or headquarters may be a monthly visit to collect salaries (when textbooks could also be collected). The frequency of curriculum and pedagogic contact may provide opportunities for training in the use of new books. Frequent inspection of school management systems indicates, among other things, whether book storage and fee collection can be managed by the schools.

Management of Textbook Projects

The organizational location of textbook project management is a vital decision. Project management may be located in an existing ministry department. Some caution is needed, however, together with considerable detailed knowledge of local ministerial organization. Several projects have suffered because the textbook element had been misplaced within the MOE and was either subject to competition from existing ministry departments or placed at the wrong level (usually too low so that key decisions took too long to achieve) or was isolated from support it desperately needed.

Because a textbook project requires diverse MOE inputs, all parties must be aware of the overall plan, be in agreement with it, see their own role in it, and have agreed on management systems to cope with the necessary liaison. Thus an average textbook project will frequently require the cooperative working of a curriculum unit, a supplies department, a finance department, teacher training institutions, subject and regional inspectors, a legal department, and the government printer. This is a complex set of interrelations, all of which must be examined and tested for effectiveness before implementation.

Because of the problems involved in complex interrelations in textbook projects across departments of an MOE, a common solution is to establish a special textbook unit. This textbook unit, because it cuts across existing MOE activities, is frequently deeply resented. If in addition it is provided with buildings, facilities, equipment, and financing which are not available elsewhere in the MOE, jealousy and demotivation can frequently develop.

Effective project management requires the correct number of staff having adequate seniority to make decisions and with sufficient experience and qualifications. Project staff need to be sufficiently well rewarded to be permanent, and senior members need detailed terms of reference. A sufficient lead-in time for project staff is needed for preproject training. The technical assistance required throughout the life of the project should be correctly assessed and acquired in advance. Detailed, well-designed management systems are needed for controlling and monitoring progress. Suitable premises, equipment, and transport are fundamental. Proper financial systems are important, together with clearly understood financial accountability. The project must establish good communications with all other ministry departments through regular meetings. Clearly understood limits of authority go hand in hand with clear objectives (including the timing and sequence of events) understood by everybody. Moreover, all policy should have been thoroughly discussed and agreed in advance by all parts of the ministry of education involved in the project and confirmed in writing by the minister or senior official.

Ideally, every project should be run by an experienced professional capable of supervising and managing all the aspects of publishing described below. Whether the unit is a state publishing organization, a parastatal, a commercial joint venture between local and foreign elements, or an independent commercial publisher, the existence of experienced publishing management is probably the single most important factor in making certain that good books are delivered on time within the budget. The choice of organizational approach depends on government policy (for example, whether government requires monopolistic state publishing or private enterprise, and whether the government will allow foreign investment and involvement), local publishing capacity, the size of the market, and the reliability of procurement funding.

The Development of Books

The development of a book begins with its writing or adaptation and ends with its publication. Many specialized skills are involved.

Methods of Developing Materials

Origination. Originating a book requires artwork, design, color separation, filmmaking, plate making, and so on in addition to the writing and is the most expensive way to provide teaching material. It is frequently necessary for such subjects as primary social studies, local history, geography, politics, and similar subjects for which adaptation is not feasible. It is less necessary for subjects of more universal application such as mathematics and science. Fully original works require all publishing skills and should not be attempted unless these are available or the MOE is willing to acquire them.

Origination is more likely to be needed where national or local languages are the medium of instruction or where local elements are a dominant requirement for content.

Adaptation. Adaptation of an existing work is a realistic option when the language of publication is the same as that of the original text. Adaptation combined with translation is possible but is more expensive and requires sophisticated skills. Depending on whether adaptation is heavy (changes to more than 30 percent of the original text and artwork) or light (about 10 percent), there are considerable cost savings in adapting existing course material for local u. · when no language change is required. Cost savings can be used either to allow higher production specifications (more color, better paper and binding) or to reduce the price. Adaptation is particularly suitable for relatively universal subjects (for example, mathematics and science) and at the secondary level (for which print runs are smaller and content is likely to be less locally specific). Adaptation allows smaller countries to redesign materials to suit local circumstances. Adaptation can include local names, dress, customs, and examples, and if done properly is rarely obvious. The main savings occur on authorship, artwork, typesetting costs, and film. The level of publishing skill required locally is less than for full origination but is still considerable. Adaptation provides useful training opportunities for local staff to work with professional publishers.

Special Editions of Existing Texts. If a suitable text is available, an edition can be negotiated with no content alterations but with different production specifications suitable for local usage (for example, paper cover rather than case binding, lower paper weight, different format, and so on). Special reprints can be done either locally or overseas depending upon available manufacturing facilities. Substantial cost savings can be achieved by this method, with the disadvantage (should this matter) of loss of local application if an overseas text is used. This method requires no particular local publishing skills, but some production knowledge is required.

Commercial Purchase of Existing Text. In countries with small populations, the free choice of available texts can lead to splintering of print runs and unnecessarily high costs. If the ministry prescribes texts, it can negotiate bulk deals either for its own distribution or for onward sale to commercial outlets. Obviously prescription restricts free choice, but this can be advantageous where the qualifications and experience of local teachers are limited and in turn limit the pedagogic benefits of teacher involvement in text decisions. Although local publishing skills are not required, some procurement and negotiating ability is necessary. Many countries (for example, Jamaica and Nigeria) have a considerable body of commercially produced material by local authors and based on local curriculums, but this material is often unavailable because of financial problems. In these circumstances, the initiation of a completely new project only adds to the sum of locally available material without attacking the crucial issues of funding and financing.

Materials can usually be purchased from commercial publishing sources (either local or foreign) if there is a large enough market and if reliable funds are available. (Some foreign exchange is almost certain to be required for almost any textbook to pay foreign publishers, foreign printers, or foreign suppliers of raw materials.) If no specific materials exist, they can be commissioned from commercial sources by negotiation or by tendering, developed as a joint venture between the MOE and a commercial publisher, or developed by commercial suppliers hired by the MOE on a service contract.

Local Publishing Capacity

Commercial Publishing. The involvement of local commercial publishing in school materials is important in developing wider publishing ability. If local commercial publishing is excluded from school publishing, all publishing development is restricted and in smaller countries is probably killed off completely.

The exact size of a market at which competitive commercial publishing becomes possible is a function not so much of population but of the amount of money which a government makes available to sustain commercial interest. Thus countries with small populations but high per capita incomes (for example, Denmark) can sustain commercial publishing activity, whereas countries with large populations but low per capita incomes have found the task much more difficult. In broad terms, a total disposable primary school expenditure of approximately $1 million per year returning a net profit margin of about 10 percent probably provides sufficient inducement for a commercial publisher to maintain a minimum permanent staff and develop some editorial expertise and skills. This, of course, is a purely theoretical calculation that could be influenced by numerous other factors—for example, outside competition, requirements for state-dominated publishing, lack of foreign exchange, and the unreliability of provision of funds by the MOE.

Local companies (private or state) should be surveyed to see whether their list of publications includes good educational texts of the type required. If so, the exact level of involvement of the local company should be checked. It is also worth noting text publication dates to make certain that they were undertaken recently and

that current staff were involved. Staffing should be investigated—in particular, the number, length of experience, qualifications, and permanence of editorial, design, and production staff.

The costing and estimating department should be checked, and samples of previous quotations requested. These quotations should be compared with known professional samples. The availability of local authors should be noted, together with their subject mastery, adequacy of language, past experience, and commitment. The production quality of books, price, and reliability of delivery should all be checked. If there are no existing publishing organizations, it is unlikely that a local publishing capacity could be brought into existence quickly and without substantial professional guidance.

State Publishing. State publishing normally implies a monopoly, but it is possible for state and commercial operations to exist side by side. It is argued that state publishing promotes local book development, lower prices (because of lower profit requirement), and economies of scale. The disadvantages of state publishing include more control over content and production, the adverse impact on other local book development, lack of competition (resulting in the perpetuation of bad books, high costs, and poor-quality production), and the fact that the real costs of operation are frequently hidden. Local state publishing does not necessarily imply local printing or manufacture or ministry distribution or even free distribution.

Parastatal Publishing. If textbook publishing skills are not available to a state publishing organization, it can form a partnership with commercial companies that have the skills. Parastatals can be formed with local or overseas commercial companies (most examples are with overseas companies, although Nouvelles Editions Africaines in Senegal is an exception). The parastatal is normally operated for profit and as a result can be more cost-effective than state publishing. Parastatals intended to help develop local publishing should always require expert staff to be based in the country, and specifically identified training functions should be built into the terms of partnership.

Joint Ventures. If the market is large enough to support local commercial publishing, joint ventures between local and foreign publishing companies can inject high-level skills and rapidly upgrade local industries. Indigenous requirements (for example, in Nigeria) or requirements that school textbooks be published by local companies (for example, in Mexico) can be used to ensure the creation of local publishing skills.

An argument in favor of local commercial publishing or joint ventures is that the profits from school business will stimulate other kinds of publishing. Competition will increase quality, and publishing skills will be developed locally. Against this, development of local commercial or joint ventures may seem more expensive than state publishing because of the profit margin. Local commercial or joint venture publishing incurs relatively high costs in small countries where competition creates costly small print runs.

Decisions for a Publishing Program

Printing and publishing are not the same thing. Publishing is the ability to create books. Printing is one of the manufacturing processes in their production (see next section on production). The existence of local manufacturing does not guarantee that of local publishing. Books are not necessarily cheaper if local manufacturing facilities are used. (All too frequently they are considerably more expensive.) Many countries with substantial international publishing industries (for example, Australia, New Zealand, Nigeria, and Spain) do much manufacturing in other countries where it is cheaper. Most school publishing in the United States takes place domestically because of national preference legislation which overrides price factors.

Although it is desirable to be able both to publish and to manufacture in home territory, the two activities should not be confused. It is much more important to develop local publishing—which reflects the cultural, educational, intellectual, and scholarly life of a country—than an arbitrary manufacturing ability. A publishing industry depends upon a steady flow of activity, and this in turn depends upon regular funds to purchase existing books and develop new books, supplementary material, teachers' guides, and so forth. For example, a local publishing capacity cannot survive on the basis of a major effort completed ten years ago. Since then, the staff, which acquired much experience in authorship, editing, design, and production, have most likely passed on to other activities, and their experience thus has been lost. A Central American publishing project in the 1970s was reported to have lost the vast majority of its staff and institutional memory by the time a new development program was considered in the mid-1980s.

An ongoing program requires considerable planning, a long view of the benefits to the country by both government and funding agencies, and a reasonable certainty of regular funding. If all these conditions exist, the foundation of a publishing program can be laid. The textbook projects of the past ten years, however, suggest that at least two project periods (that is, ten years) are necessary before a full publishing capacity is likely to

develop from scratch. During this time, professional training, regular technical assistance, and high-grade supervision are required to develop good publishing skills.

Acquiring Publishing Skills

A country that lacks adequate publishing skills may acquire them in a number of ways: by providing professional training; by hiring people with the required skills; by developing joint ventures or parastatal arrangements (as described above); or by contracting for a publisher to provide finished books.

Professional training and attachments are not recommended as the primary way to acquire skills. Few (or no) courses can adequately provide the full range of publishing skills. Publishing skills in general and school publishing skills in particular are heavily dependent on practical experience over, say, five to ten years. Formal training (and related professional attachments) should therefore be regarded as a supplement to on-the-job training rather than as a main method of skill acquisition.

Contracting with a publisher to undertake services for a fee is well established. All costs of authorship, editing, raw materials, and manufacturing can be paid directly by the local MOE so that all financial interest in the outcome of the project is in their hands. The disadvantage of contract publishing is that it is unlikely to attract the interest of suitable publishers because most of them would be reluctant to extend services at a reasonable price with so little control over the project. In addition, because the professional work is identical for both large and small print runs, the fee for small countries could be disproportionately large. The essence of contracting for finished books is that the MOE awards a contract to a chosen publisher (the choice could be via organized tender) to deliver finished books, film, or camera-ready copy. The MOE maintains ownership and controls decisions over content, presentation, format, cost, and authorship. The contract must specify the delivery date, quantity, quantities and procedures for reordering, price (or price formula), agreed design content, and authorship approval conditions (such as the amount to be paid to the author, who will hold the copyright, and whether the MOE or the publisher has the right to approve prospective authors). The contract can also include training requirements for local staff.

Publishing Functions

The four basic publishing functions are authorship, editing, design, and production. The first three are discussed below; production, a large topic, is discussed in the next section. Distribution, another function of publishing, is discussed later in conjunction with book selection and storage.

Authorship. Textbook authors at both primary and secondary levels must have not only writing ability but also teaching experience. They must of course know their subject, and they should be able to make a realistic assessment of teacher abilities and requirements. At the primary level in particular, they should be able to work with illustrators and within cost and design constraints.

Good writing either by individual or committee is rare. Manuscripts are often too long or pitched at too high a level. An overly pedagogic approach may place too many demands on the teacher. Illustrations and text may not be properly integrated. Authors may be too rooted in good urban rather than in poor rural conditions. Some authors are unable to accept advice or criticism. It is unrealistic to expect a high proportion of good manuscripts from teams of new and untried authors. Furthermore, the occasional nature of much original writing for textbook projects means that the writing skills developed by a project are frequently wasted because of the lack of an ongoing program. For example, the Ghana textbook project of 1974–75 had lost a high proportion of the original writing team when the revised editions were undertaken in 1984 because there had been little or no work for the authors in the intervening period.

Editing. Various editorial skills are required in schoolbook development. Editorial policy must be formulated in such a way as to keep materials in line with the MOE curriculums and with pedagogic and economic requirements. This policy must be communicated to the individuals involved. Editors must identify and commission illustrators and authors and brief them on the presentation and content of the work. They must evaluate the work and give advice and guidance on writing and rewriting. They must supervise work load and maintain deadlines. They must check copy for content, style, consistency, accuracy, level, and presentation. They must liaise between authors and illustrators, and coordinate design and production specifications. Editors are responsible for obtaining permission to use quotations and art from other sources, and they also negotiate contracts and fees with authors and artists.

Schoolbook editors must have broad publishing knowledge and experience in editorial, design, and production work. They should have the relevant education and pedagogic background and possess detailed knowledge of and experience with target students, teachers, and school conditions. Good editors are rare, and previous schoolbook experience is essential for major origination or adaptation of textbooks.

Design. There are two interrelated but separate aspects of schoolbook design: physical design, covering format (size and shape), length (number of pages and words), choice of raw materials, and binding; and layout, covering choice of typeface, number of colors, type and quantity of illustrations, appearance of the page (including chapter, running, and subsidiary headings), and so on. In the adverse conditions in rural schools, physical design elements which determine the durability of a book deserve (but often do not receive) the same weight as page layout. Textbook design is a highly specialized activity and cannot be undertaken by inexperienced graphic designers.

Book Production

In large publishing projects, separate production departments are responsible for monitoring work with manufacturers, maintaining work flow, meeting deadlines, checking for quality control, and so on. In smaller projects, an editor is frequently required to undertake these functions. In this situation, there is a danger that production control passes from the publishing unit to the manufacturer. Inexperienced editors frequently do not know whether the delivered books are of acceptable quality or whether additional charges are valid. Thus good production management, either as a permanent part of the textbook project or as a consultant skill, is essential to maintaining standards, meeting deadlines, and operating at optimum costs.

The production specifications and associated production decisions arise out of design decisions. These in turn are the function of a difficult mix of pedagogic and economic requirements. The production specifications should cover format, length, binding, paper weight, number of colors, origination processes, choice of suppliers, choice of raw materials, layout (see above under design), print run, production timetable, and delivery deadline.

Format. The life of a book is likely to be longer if its format is compact (a maximum of 220 by 140 millimeters) and of portrait type (that is, bound down the long edge). Where numerous students crowd around too few desks, they find it easier to use small portrait-shaped books than large landscape-shaped ones. This ease of use also applies when there is no classroom furniture and students sit on the ground. Compact books are also more easily carried by students, fit more easily and with less damage into bags, and are more easily stored.

Unfortunately, this format limits designs and page-layouts. As a result of curriculum pressure, larger and more vulnerable page formats are used in the most adverse physical conditions, which unacceptably shorten book life. But the effectiveness of a textbook is not necessarily limited by its format.

If books are sold to students and are thus transported from home to school each day, a durable format is more important than if books are provided on loan and are kept in school. Parental purchase often generates better care of books, however and this can offset the greater amount of handling. Books for secondary schools, which generally have better physical conditions and standards of book care, have much more flexible requirements for format.

Length. Books should be short rather than long. The amount of work that an inexperienced schoolteacher can get through is generally overestimated, and short books are cheaper (a significant factor in schoolbook provision, which can be measured in millions of dollars).

Binding. Properly bound paperback books will last at least three years with good care, even in quite adverse environmental circumstances. Hardbound books are considerably more expensive, and it is doubtful whether they are cost-effective. Some production specialists even believe that the weight and rigidity of hard bindings are unsuitable in tropical rural areas and may shorten book life. For primary schools, wire-stitched bindings are generally acceptable on compact books of up to ninety-six pages. For longer books, sewn bindings are desirable. Glued-only bindings are considered unreliable in hot or humid climates.

Water-resistant covers (which are laminated or varnished) are desirable where books are likely to be stored or used in damp conditions. In Liberia, where varnished and unvarnished books were stored side by side in damp conditions, books with varnished covers suffered substantially less damage. Some laminations lift and bubble in tropical climates; mechanical varnish can stick in humid climates. Chemically bonded (catalytic) or ultraviolet varnishes are slightly more expensive but probably best.

Paper Weight. There are two schools of thought about paper weight. The use of 48–55 gsm (grams per square meter) newsprint reduces production costs considerably. It also shortens book life—especially in damp or wet climates where many types of newsprint will not support even their own weight. Wood-free book paper of 70–80+ gsm is widely used and stronger, and it provides greater probability of acceptable book life (providing that sensible binding and format decisions are made). There are plenty of examples of sewn paper-covered books using this paper weight lasting up to eight years, even in adverse conditions. An average life of three years is therefore not unrealistic. Good book

paper is also more opaque and will take type and illustrations (particularly color) very much better. It thus has distinct pedagogic advantages.

Color. It is generally accepted that color is an important ingredient in books for children, particularly at lower primary levels where an attractive presentation can considerably improve learning. Nevertheless, four-color books cost much more both to originate and to manufacture than one-color ones. Good design can make cost-effective use of one or two colors or can combine four-color with one- or two-color printing.

Origination Processes. Origination processes include typesetting, drawing of artwork, separating colors, and filmmaking—the production stages up to the point printing begins.

Typesetting consists of retyping (or converting from a computer diskette) all the text of a manuscript in a selected typeface of a specified size and line length. Artwork denotes all the illustrative matter—photographs and drawings—treated or redrawn by artists so that it will be suitable for reproduction. Color separation must be performed on all color artwork, including color photographs, in order to be able to print in more than one color. Filmmaking is necessary to make plates for lithographic printing. To prepare the plates, the entire typeset text and all the pieces of artwork (with any colors separated) must be arranged exactly as they are to appear on the pages of the finished book and then be photographed.

All these processes are separate and can either be contracted to separate organizations or be done by one selected printer. The quality of the finished book will depend heavily on the skill with which these processes are performed and combined. And a cost-effective choice of suppliers will materially affect final costs. The costs of the origination processes described above, plus all research and development costs, constitute "first costs," which are costs incurred whether or not a copy of the book is ever printed. First costs are less significant for large print runs than for small ones—hence the first-cost savings of adaptations (described above) for projects in smaller countries.

Choice of Suppliers. The choice of a particular supplier or process for origination and for printing and binding—the two basic manufacturing processes—is a skilled production function. The simple existence of a local printer does not mean that there is suitable machinery for a particular book job or that the machinery is effectively maintained and run.

The criteria for selecting manufacturing and origination suppliers are quality, capacity, reliability, and cost. Factors to consider are whether the supplier is capable of producing the specified quality of work and has the right equipment to handle the quantity of work in the time available.

The supplier must be able to guarantee delivery when required. When local suppliers are under consideration, access to raw materials, availability of spare parts, reliability of power source, availability of necessary maintenance facilities, and the priority given to the task are all key factors. When suppliers in another country are under consideration, the regularity, reliability, and cost of freight services are additional factors.

A "request-for-estimate" pro forma should be used both for accurate project costing and budgeting and for putting together preliminary information to enable broad decisions to be made on local versus overseas origination and manufacture. Wherever possible, the supplier should be asked to break down estimates into raw materials costs and process costs, and with many local potential sources it is often useful to ask for a schedule of essential spare parts and maintenance necessary to guarantee on-time delivery.

Estimates should always be requested from state or parastatal sources, domestic commercial manufacturing sources, and reputable international manufacturing sources. International sources should always include a CIF (cost, insurance, and freight) estimate in addition to the job quotation.

Choice of Raw Materials. The basic raw materials required for book production are text paper, cover board, binding material (wire, glue, or thread), ink, laminate or varnish, film, and plates. The cost of raw materials is affected by five main factors:

- *The quantity purchased.* Countries with small populations that have low-level requirements probably pay considerably more for paper than large countries or large multinational publishers.
- *The source of purchase.* Large quantities of paper can be bought at cheaper rates direct from paper mills. Smaller quantities are usually bought through paper merchants and may be restricted to available stock in standard sizes.
- *The regularity of purchase.* Regular customers usually get better terms than occasional customers.
- *Creditworthiness of the customer.* Long delays in payment while waiting for foreign exchange allocation are not conducive to negotiating better prices.
- *Storage facilities.* The effective cost of raw materials is considerably increased when storage facilities are poor and there are stock losses either through inadequate security or deterioration.

Book Selection, Distribution, and Storage

Book Selection

There are four methods of book selection: by prescription, by recommendation, by free choice. and by ministry of education issue.

Prescription. If books are selected by prescription, the MOE decides which course will be used. This implies a single course adoption. Decisions are frequently made on a cycle (every three to five years) by a formal selection process, an MOE committee, or a curriculum panel. Prescription implies sales to parents through MOE or commercial outlets. It is more common at the primary than secondary level.

Recommendation. If books are selected by recommendation, the MOE provides a list of approved courses. Selection can be annual or periodic, and both formal and informal selection procedures are equally common. The recommendation process involves sale to parents, usually by the school from limited options. This method is more common at the primary level in larger countries and at the secondary level in small and medium-sized countries.

Free Choice. If books are freely chosen, there is no MOE intervention at all. This is rare at the primary level and more common at the secondary level—particularly in larger countries. Texts at the secondary level are usually selected by schools depending upon their availability.

Ministry Issue. If books are issued by the MOE, there may be either a single set or several alternative sets (as, for example, in the Philippines). The major differences between this option and those cited above is that ministry-issued texts are distributed by the ministry rather than by the commercial sector, and generally remain the property of the ministry rather than of the parent or student.

Book Distribution and Storage

Implications of Parent Purchase. When books are owned by parents and students, they normally will be stored at home Thus there is less need for classroom storage, and MOE involvement in distribution and storage normally will be greatly reduced. Distribution will be either entirely through commercial outlets or to ministry distribution points. The need to distribute to individual schools exists only if books are supplied to schools for sale to students. The MOE loses control over the level of book provision in schools because this will be determined by access to book-sale outlets and by the parents' ability to pay. Mandatory book ownership generally has not worked as a requirement of primary school attendance. Mandatory ownership is easier to enforce at secondary schools because the motivation to attend is higher.

Purchase by parents depends upon good national coverage by sales outlets. At the primary level in rural areas. this can be very difficult. With limited purchasing power. foodstuffs and basic hardware are more attractive investments to petty traders than books. and markups will tend to be very high. Commercial wholesalers are frequently unwilling to extend credit because of difficulties of collection. Under these circumstances. MOEs might have to consider direct involvement to achieve equality of opportunity.

Implications of Ministry-Controlled Distribution. Costly storage facilities are required for MOE-controlled distribution. Stock control and stock movement systems are needed, requiring trained storemen. A distribution system must be capable of moving supplies from central stores to individual schools. Distribution to rural primary schools is, in many countries, a major undertaking. The assumption that a distribution network exists already for other supplies may only be theoretically true and always needs to be checked.

School management systems need to maintain and record supplies permanently issued and loaned to students. Other school supplies are usually consumable; only books are normally subject to issue and return.

Elements of MOE Distribution Systems

Warehousing. All warehouse premises should be secure, with ceiling bars, steel window bars, cement floors. steel doors with interior hinges and locks and day and night watchmen. Warehouses should be weatherproof and well ventilated to prevent fungal damage. Racks should be used to keep the stock off the floor. Clearly, warehouses must be large enough to cope with foreseeable maximum usage and growth.

Most systems will need permanent central warehousing so that stock can be accumulated and organized for onward dispatch. But except in very small countries. the number of primary schools to be served makes direct distribution from a central warehouse expensive and impractical. It is common to have a "two-link" system (central-district; district-school). It is rare to have four-link systems except in the very largest countries (for example, China and Indonesia). The number of links is a function of both the size of population and the accessibility of schools. The number of links increases the complexity of the distribution operation. and the cost per unit distributed therefore increases with the number of links built into the chain.

Distribution from district to primary school (normally the last link) is often done by teachers because transport is costly and many primary schools are extremely inaccessible. It is probably realistic to rely on teachers to collect supplies if stores are located at a place which teachers visit regularly—for example, district offices where salaries are paid. Secondary schools are frequently supplied via MOE distribution systems. It is common for secondary supplies to continue efficiently through an MOE system even when primary supply systems have broken down. This is because secondary schools are larger, not as numerous, and generally in relatively accessible locations.

Transportation. Two basic options for transportation exist: MOE-owned-and-operated vehicle fleets or hired commercial transport. The disadvantage of the former is that the transportation system—and therefore the distribution system—frequently ceases if MOE vehicles break down or are not available. The disadvantage of the latter is often the lack of a regular budget for hiring vehicles. Even with ministry fleets, there can be problems with budgets. Some commercial trucking companies are also unwilling to provide services to rugged areas or at difficult seasons.

An overriding advantage of a commercial trucking operation (assuming such an operation exists) is that distribution is unaffected by vehicle maintenance and operational problems. Additionally, commercial trucking companies are generally more experienced and reliable in up-country distribution.

Control Systems. Two basic control systems must be operationally effective: stock record systems (for quantity and location of stock) and record systems for stock movements. No stock should enter, move around within, or leave any warehouse, storeroom, or school without an effective record of movement. There are numerous other relevant but subsidiary control systems to cover reordering, payment, returns, damages, and so on. All control systems should be as straightforward as possible and geared to the ability of the staff who operate them. Regular monitoring and random checking of systems should supplement detailed annual reports of government auditors.

School Storage. Some form of storage space is needed in all schools whether books are owned by the MOE or parents. In general, secondary schools are more likely to have adequate storage space for books and other school supplies. Actual conditions do, however, need checking in every country, and newly established schools in remote areas need particularly careful checking. Well-developed primary systems traditionally have storerooms attached to head teachers' rooms, and cupboards are commonly provided in every classroom. Ghana, for example, has basic storage facilities at this level in most schools; Sierra Leone does not.

Basic school storage problems likely to be encountered are poor weatherproofing and nonexistent security. Loss can be caused by fungus, insects, weather, and theft. Poor storage conditions endanger the provision of physical resources, which is expensive. Heavy loss dramatically increases the cost of such provision. A solution is the construction of school storage systems and the provision of cupboards and lockers.

The construction of school storage systems is likely to be a major construction undertaking—both expensive and slow. Cupboards and lockers can be provided cheaply (at the end of 1984, a steel locker measuring 6 × 3 × 1 feet cost about $75) and quickly. The delivery and erection of lockers in large numbers of primary schools is, however, a substantial logistical problem and should not be underestimated.

Distribution via Commercial Outlets

The commercial sector can distribute books on behalf of the MOE, with payment for distribution made when confirmed delivery slips are produced. Or the MOE can sell books to the commercial sector at fixed discount and resale prices. The commercial sector can then sell to the schools.

There are arguments in favor of commercial involvement in MOE distribution. Increasing the book market increases the number and quality of bookshops throughout the country. A competitive element can also lead to faster and improved service. The MOE will be relieved of a substantial administrative burden and will save on distribution, warehousing, storage, transportation, staff, and record-keeping costs.

There are also several arguments against commercial involvement. The existing commercial networks are concentrated in urban areas and do not reach inaccessible rural areas. Additional inducements have to be offered to encourage commercial operations to serve difficult areas, and there are enormous problems in monitoring and controlling activities. An alternative to the commercial supply for difficult areas is a mixed system whereby commercial operations are supplemented with MOE operations.

Book Use

Training

Any program for improving the availability of books and materials in schools clearly has important implications for teacher training. The most obvious of these is that teacher trainees must be given the opportunity to become fully conversant with the materials which

they will be using in the schools. It is thus essential that relevant textbooks be either free or provided as cheaply as possible to all trainees. In many projects, free sets of books, particularly at the primary level, are costed against the whole project. In addition, provision of books to libraries of teacher training institutions should be seen as an essential feature of every project.

Beyond the provision of resources, however, specific units need to be built into preservice teacher training to make certain that the curriculum ideas contained in textbooks and the management skills involved in using the textbooks are provided on a continuing, long-term basis. Preservice training, of course, is slow to take effect. A more immediate and widespread impact requires sustained programs of in-service training for existing teachers. In large countries, this can be a daunting task, but there are numerous examples of effective high-density training programs being developed and executed quickly and relatively cheaply (for example, in Indonesia, the Philippines, and Sierra Leone). A convenient and relatively cheap procedure is to run a limited number of seminars for central inspectors, advisers, teacher college lecturers, and district education officers. A second series of seminars can then be organized by the inspectors and district officers for key teachers and teacher supervisors at the district level. The final stage will be the organization of a large number of school-based seminars, grouped according to accessibility.

In-service training should concentrate both on curriculum and pedagogic issues as well as on the management of books and materials. All training programs should include the subject of basic book care, particularly for rural environments. Very substantial sums of money can be saved for the education system if book life is extended by even one year.

Teacher training as a support for book use is much less developed in the secondary sector. This position is unacceptable, and an increased commitment to in-service training for secondary teachers should receive high priority in any textbook project for secondary schools. Experience indicates that this increased commitment is frequently best achieved by concentrating on management training for head teachers. Preservice training should, however, also pay specific attention to the curricular, pedagogic, and managerial aspects of books and materials used in the classroom.

School Management

The improvement of school resources is the ultimate aim of any textbook project, and the person with final responsibility for managing these resources day to day is the head teacher. He or she must organize the school's delivery of the curriculum, motivate the teachers, help them to develop professionally, and constantly monitor the quality and performance of the school. This is an extremely difficult task when standards of accommodation and materials provision are low. Declining standards in school and classroom management lead to the deterioration of education and unacceptable wastage of physical resources. The first priority in upgrading them is to design and establish a clear and effective system of school management.

Once a system is designed, it can be explained in a simple booklet distributed to every teacher and trainee in the country and to relevant administrative staff. Units on school management can be included in all teacher training at both the primary and secondary levels and in the training of educational administrators (usually through a series of high-level seminars). An in-service training program can be developed to transfer the school management system to teachers in the field. Adequate supervision by the inspectors is desirable—to make certain that management systems are being maintained and to provide help, encouragement, and assistance to teachers in the early days.

The development and maintenance of a system of school management at the secondary level is every bit as important as at the primary level. But as with teacher training, it is frequently ignored. Several projects have revealed that the perceptions, priorities, attitudes, and administrative style of the secondary school principal are crucial in determining what facilities and resources are allocated to a given academic subject. Such allocation in turn influences the quality of the work in these subjects.

The use of books in classrooms, their physical maintenance in schools, and their effective distribution can be maintained efficiently only through MOE supervision and regular inspection. Transportation availability and the mobility of inspectors thus are key factors.

Editorial, Pedagogic, and Curriculum Feedback

Continuous contact between editors, authors, and designers, on the one hand, and inspectors, teacher trainers, teachers, and schools, on the other, is particularly necessary when courses are being introduced for the first time. Specific evaluation schedules should be developed. A combination of structured interviews, simple questionnaires, and classroom diaries is recommended. Writing and editorial teams (or, at the secondary level, textbook selection boards) can build up a picture of the strengths and weaknesses of particular materials in the context of a particular country situation. This will enable revisions and corrections to be made and will assist in the selection of recommended or prescribed texts. Attention should also be paid to the physical durability of books, and this should be included in evaluation schedules.

Other Considerations

Procurement, Tendering, and Evaluation

There is typically a variety of procurement requirements in textbook projects—including producing finished books, securing licensing rights for the adaptation of basic texts, providing editorial services, developing manuscripts, procuring origination services, supervising printing and production, and getting raw materials. In addition, related services frequently need to be procured. These are international freight consolidation services (when a variety of materials coming from a variety of overseas sources requires bulking-up or packaging), internal distribution services, and construction (of warehouses, other storage facilities, and schools).

The exact procurement requirements for each project will often vary considerably, and professional assistance may be needed to distinguish precisely what services are required. Thus in Uganda a procurement exercise was delayed for almost a year because the local managers did not have the expertise to perceive the difference between a printing tender for books for which the MOE owned the copyright and an adaptation tender for books for which the MOE was trying to acquire the printing rights.

The basic methods of acquiring services or goods are direct negotiation, limited competitive bidding, and international competitive bidding. Direct negotiation can frequently be allied with a requirement that the suppliers seek competitive prices in the manufacture of their product. Thus in the procurement of finished books, the MOE may have decided on pedagogical grounds which books it requires, but the final price it negotiates may well depend on evidence that the suppliers have sought competitive printing quotations either for the stock currently available or for any reprint which might be produced for the project.

Limited competitive bidding is used for local suppliers, for suppliers with known specialist services, or for suppliers with particular local knowledge and contacts. One of the fundamental problems with all book procurement projects is the many variables to be taken into account and the fact that some of the variables produce contrary effects. For example, it is fairly obvious that although low price is attractive, high (but not expensive) production quality will lead to longer-lasting books. The book with the best value in production terms may not necessarily be the book most suited to the local curriculum. The balancing of these variables in the procurement of finished books is a skilled professional task.

The evaluation of negotiations or bids is again a complex process. As a basic principle, all bid documents should be matched by an evaluation schedule.

Other School Supplies

This chapter has been concerned primarily with textbooks. It should always be borne in mind, however, that school classrooms also require exercise books, pens, pencils, chalk, and other basic supplies. Distribution and storage problems for these supplies are very similar to those described for books. In other aspects, however, their procurement and funding are significantly different. All projects concerned with supplying books should take into account the availability of other related supplies.

Provision of Libraries

In countries where even the most basic textbooks are unavailable, the first priority must always be to supply textbooks. As soon as a textbook project has been developed, however, there is pressure to develop sensible school-based library systems. Encouraging the reading habit requires additional supplementary material, and this in turn implies provision of basic libraries. In many countries, a national school library service providing supplementary materials to rural schools on loan has worked very well. School library services, however, whether national or school-based, are not susceptible to easy cost-recovery systems and must always be seen as a charge on education budgets.

Library development at all levels is crucial for every second stage in a book development project and can be used as an effective emergency measure, particularly at secondary and vocational levels, in severe cases of book starvation. Library loan schemes (book banks) which use multiple textbook sets and are costed to recoup investment out of loan charges or school fees can also be satisfactorily initiated.

This final point is most important. Those responsible for textbook projects must continually bear in mind that their objective is not simply to get satisfactory books into schools but also to assist students to develop a habit of reading which they will carry with them beyond their school years.

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Using Textbooks to Improve the Quality of Education

Adriaan M. Verspoor

Educational investments in developing countries have been successful in achieving their quantitative objectives. Two decades of World Bank lending for education have provided 4 million school places in the developing world. The record for qualitative objectives is not so favorable, however. The evidence is less concrete, but the impression is that many projects have experienced considerable difficulty attaining their anticipated qualitative performance levels. Recent reviews of Bank-supported projects highlight these concerns.

Romain (1985), in a review of World Bank lending in primary education, found that "little is known of how effectively the new curricula are being applied . . . implementing large-scale national reforms of primary education, especially in regard to practical subjects, has proven to be quite risky . . . The search should therefore be intensified for reforms which are replicable." Hawkridge (1985) reviewed the World Bank's experience with distance education projects—usually for informal adult education projects. He found no convincing evidence of the cost-effectiveness of these add-on projects, and the experiences typically were not replicated. Haddad (1985) reviewed the Bank's experience with teacher training: "Most of the teacher training components with qualitative objectives were not assessed. The few that were fell more on the unsatisfactory side, either because human and physical resources were not adequate or because the attitude of trainees was negative." Searle's review of World Bank textbook projects in chapter 2 found substantial achievements and significant shortcomings.

The questions raised by these reviews are crucial. Without improvement in quality, many of the potential benefits associated with the tremendous growth of enrollment in developing countries may never reach fruition. Research evidence and Bank experience indicate the considerable contribution that textbooks and other instructional materials can make to effective teaching and to improving the quality of education.

In this chapter, the textbook issue is explored from two angles—first, the choice of intervention strategy; second, the choice of implementation strategy. Constraints imposed by a country's stage of educational development are vital considerations in both choices. This chapter suggests a typology of projects and sketches briefly the key features of an implementation strategy for each. A close fit between the stage of educational development, the nature of the intervention, and the implementation strategy is essential if textbook projects are to contribute to the improvement of educational quality.

World Bank Assistance for Improvement in Quality

Nearly 80 percent of the education projects financed by the World Bank between 1964 and 1984 included components designed to improve the quality of education. The total cost of these components amounted to $6.3 billion—nearly 60 percent of Bank lending for education during that period.

A review of programs to improve quality supported by the World Bank found that a number of methods were effective in increasing students' success both in academic performance and in the employment market. The principal method of improving quality was curriculum change, which figured in 85 percent of the change programs. Teacher training was recognized as the next most important method, figuring in 65 percent of the change programs. Other important strategies to improve quality were organizational strengthening (50

percent), the provision of textbooks (32 percent), and instruction through distance education.

In the first decade of Bank lending for education, textbooks and educational materials were considered relatively insignificant and were rarely linked to broader programs to improve quality. Often the provision of textbooks was an isolated, unsupported input. Such unsupported inputs have now virtually disappeared, and at present textbooks are almost always provided in conjunction with other elements of educational change such as curriculum modification, organizational strengthening, and teacher training.

Textbooks and Stages of Educational Development

Textbook projects vary tremendously in their specific educational objectives. For example, in a country such as Sierra Leone where there are no books in the classrooms and where many teachers have no professional qualifications, the immediate objective will be to introduce simple, relatively structured books and teachers' manuals. Considerations of curriculum and content will be secondary in these early stages of improving quality. By contrast, in a comparatively advanced country such as Malaysia, the provision of diversified reading materials is a key element of a comprehensive program to improve quality by improving both curriculum content and teaching methods. In short, the design of a textbook project reflects a country's level of educational development.

Beeby (1966, 1986) has conceptualized educational development as a four-stage growth process. His model can be adapted and broadened to include the role of textbooks and educational materials as ingredients in improving quality. Table 4-1 illustrates the four-stage growth process in which Hall's (1978) empirical research findings and the suggestions of Heyneman (1984) are combined with Beeby's model (1986).

Improving educational quality is a comprehensive developmental process. Beeby (1966) estimates that "it might take . . . a decade or two to make the most of new buildings, new equipment and hardest of all, new freedom." World Bank experience confirms this view. In Haiti, the Bank has been supporting reform of primary education since 1978, and the reform is expected to continue until well into the 1990s. In Ethiopia, the Bank has been supporting continuing primary education reform programs since the early 1970s.

All elements of a program—teachers, texts, curriculums, and teaching methods—must be congruous and at the same developmental stage. It is a certain recipe for failure to expect unskilled teachers to use textbooks designed for use by teachers who are full-fledged professionals. Bank experience clearly demonstrates that successful interventions to improve quality have nearly always resulted from comprehensive programs addressing most, if not all, the change elements in table 4-1. Such interventions are designed to begin at the existing stage of educational development and to progress through more advanced stages.

Size and Scale of Textbook Projects

The fit between a textbook project and the developmental stage of the educational system depends on a number of variables. Textbook projects can be classified according to the size of the innovation and scale of the program. The size of the innovation is the extent of the deviation from routine classroom procedures and practices. The scale of the program refers to the number of schools affected by it. Table 4-2 illustrates different combinations of size and scale.

The high-low distinctions in table 4-2 do not represent clear-cut divisions but rather a continuum along which projects can be placed. A low-scale–low-size case such as equipping n project institutions is very straightforward; but although this size and scale of operation present few problems, such efforts cannot achieve broad improvements in quality. The low-scale–high-size case is often used as a first step toward more ambitious high-scale–high-size operations. The high-scale–low-size will often be appropriate in desperate situations where supplying the schools with textbooks is the top priority.

The Role of Textbooks in Improving Quality

Stages of growth relate to both size and scale of change (see table 4-1). For programs designed to move an education system from the unskilled to the mechanical stage, the high-scale–low-size variation is often appropriate. Such an approach fits the situation of many African countries, where teachers are often untrained and poorly motivated, isolated in rural areas, and lacking any kind of professional support. There even the most minimal resources of textbooks and materials are conspicuously absent, curriculum subtleties are irrelevant, and teachers have no experience with either experimentation or innovation. In these situations, delivery of even the fundamentals is a step toward improvement in quality.

Once the fundamentals—a minimum of teacher training, essential instructional materials, and a basic operational structure for discipline and supervision—have been taken care of, the system has moved into the mechanical stage. At that point, attention can be paid to introducing some diversity in instructional techniques. Textbooks and teachers' manuals are essential

Table 4-1. ***Stages of Improvement in Quality***

Teachers	*Curriculum*	*Textbooks and other materials*	*Teaching techniques*	*Supervision support*	*Teacher reaction to innovation*	*Possible change*
Unskilled Ill-educated, untrained, questionable mastery of subject content or teaching techniques, often isolated and poorly motivated	Narrow subject content, emphasis on 3 Rs, low standards high wastage accepted	One textbook per class used by teacher near total absence of instructional materials	Recitation, rote learning and memorizing students copy off blackboard no individualization	Sporadic focused on administrative control and compliance with regulations	Ignorance confusion and nonapplication	Simplify structure and provide structured teachers guides text books and minimal instructional materials train teachers in subject matter and a few basic teaching techniques help teachers perceive need for improvement
Mechanical Lower secondary education, little professional training, moderate subject mastery incidental contact with colleagues through in-service training, some interest in professional improvement but easily discouraged	Highly structured emphasis on three Rs standards imposed by examinations, repetition accepted as a means to maintain uniformity	One or two textbooks per student in core subjects	Memorization slavish adherence to curriculum short term activities and objectives rigid application of one instructional technique	Occasional focused on compliance in-service training infrequent—focused on dissemination of structured programs, emphasizes standardized application of curriculums and materials	Uncertain about use focused on personal mastery, dilution of innovation to adapt to personal, professional capacity and motivation	Broaden curriculum increase subject mastery training introduce a few simple techniques teachers guides and textbooks set standards enforced by exams increase confidence of teachers through training and school level support
Routine Secondary education trained, adequate subject mastery incidental contact with colleagues, interested in improving student performance if adequate incentives are provided	Curriculum goals begin to broaden but syllabus still heavily dominated by examination in principle opportunities for adaptation and experimentation exist little attention to emotional/creative development of child concern is prevention of failure	Several textbooks available deviations and selective use of available text supply of materials adequate small school library	Memorization still but increasing attempts to introduce learning by doing medium term planning using text books and materials in a more goal-oriented way limited variation some tracking of students	Supervision more frequent and less oriented toward compliance in-service training more frequent, emphasizes the application of teaching role of principal as source of knowledge becomes more important	Skeptical about immediate effects willing and able to make honest effort, will try to adapt innovation for ease of classroom management and standardized application	Teaching more focused on understanding some diversity and flexibility can be introduced to the curriculum objectives can be broadened to include attention to emotional and creative development promote professional exchange between teachers
Professional Well-educated, well-trained, good subject mastery, frequent contact with colleagues, reader of professional publications, interested in improving student performance	Meaning and understanding stressed in wider curriculum allowance for variety of content and methods, considerable attention to emotional and creative development of students	Broad availability of textbooks supplementary reading materials and reference books well stocked school library, variety of instructional materials	Self-generated habits of learning ability to investigate new ideas longer-term instructional planning allows teacher to adapt use of materials and curriculum sequence to student needs individualized or multigroup instruction	The principal becomes source of pedagogical support external support and assistance are available on a contingent basis, training emphasizes the development of professional skills, allowing teacher to select appropriate instructional approach in each situation	Needs of students is central focus willing to try and test alternative approaches confident about own ability to master and adapt innovation to fit needs of particular group of students	Innovation becomes permanent feature teachers can be encouraged to behave and perceive themselves as professionals

Sources Adapted from Beeby (1966) Hall (1978) and Heyneman (1984)

instruments in helping teachers overcome their uncertainty and become more confident about their mastery of the subject and their dealings with students. Gradually, more ambitious innovations can be tried,

Table 4-2. ***Innovation Profiles***

Scale of innovation	*Size of innovation*	
	High	*Low*
High	Textbooks produced and distributed to all schools as part of new national curriculum.	Textbooks supplied to all schools, using an existing curriculum.
Low	Books and materials developed for new curriculum as a pilot in a few schools.	Textbooks supplied to a few schools, using an existing curriculum.

Source: Author.

diversity can be considered, and multigrade teaching (probably not more than two or three grades) can be introduced.

When the teachers have developed sufficient subject mastery and self-confidence to attain the upper levels of the mechanical stage, objectives to improve quality can become more ambitious. As the basic teaching techniques become increasingly routine, the focus of efforts to improve quality can shift from the teacher to the student. Within the constraints of a system that tends to be heavily dominated by examinations, the introduction of flexibility and variety in the teaching process allows teachers some latitude in adapting to the needs of groups of students. At this stage, teachers will have become sufficiently self-confident to handle diversity in the classroom. The availability of textbooks and instructional materials will also need to become much more

diversified. A small school library meets the instructional objectives of this stage very well.

At the higher levels of the routine stage, curriculum objectives shift gradually from memorization and passive learning to investigation and the discovery of meaning. Instruction in the classroom can become increasingly individualized, with teachers demonstrating professionalism in diagnosing individual learning potentials and problems, providing learning opportunities, and helping students overcome difficulties in ways suited to the particular needs of each. A large supply of textbooks, reference books, and instructional materials from which the student and teacher can choose has to be available at this stage to accommodate a variety of immediate learning needs.

Clearly, textbooks make an important contribution to improving the quality of education in all stages of educational development. They can be effective across the size-scale continuum and can be designed to fit the specific stage of educational growth prevailing in each country. To move from the unskilled to the mechanical stage, a low-size–high-scale type of project will often be the most appropriate. To move from the routine stage to the professional stage—or to make progress within the professional stage—high-size–high-scale operations must be envisaged. A pilot is often necessary to test the effectiveness of a particular intervention in a particular setting. Teaching is a very idiosyncratic activity at every stage of educational development, and there are few general recipes for effective teaching that have universal applicability.

Designing the Implementation Strategy

A well-designed implementation strategy addresses four issues:

- Delivering the program
- Sustaining the program
- Dealing with uncertainty
- Procuring the inputs.

For each type of project discussed above, the strategy will be different, as summarized in table 4-3.

The two critical elements for implementing a textbook project are funding and commitment. As discussed, a noninnovative program that simply provides textbooks is often appropriate in countries in the early stages of educational development. Such a project is characterized by careful operational planning and the dissemination of detailed instructions to local implementers. Because the technical details of the tasks are clear-cut, the process can be standardized and is replicable. A few test runs will often be sufficient to get the bugs out of the system, and supervision focuses on following standardized procedures. Nevertheless, unforeseen local complications often crop up and obviate the implementation of the best-made plans. When the local task environment is particularly unstable, an effective response is the creation of an autonomous agency, with a stable source of funding to sustain the program. Furthermore, the achievements of the program need to be effectively communicated to decisionmakers to develop and maintain commitment. Actual textbook procurement can be carefully scheduled and handled in large volume through international competitive bidding in order to reduce costs.

At the other end of the spectrum are the textbook projects which are integral parts of ambitious educational reforms (high-size–high-scale). Such projects typically make considerable demands on the professional capacity and motivation of teachers and are usually feasible only at the higher levels of educational development—toward the upper end of the routine stage or into the professional stage. For such projects, detailed operational planning at the central level is seldom possible, and the field experience of local implementers must be incorporated into the project design. Supervision is largely performance-oriented. Both the task environment and the effectiveness of the educational intervention are specific to the local setting, and they vary accordingly. The design of such projects will usually have to be open-ended and flexible, with considerable learning by doing and extensive testing of curriculums and supporting materials.

Management of such projects will need to be close to the implementation process, and local institutions with real authority to adjust resource allocations are vital to success. Central management can monitor strategic issues and should be informed of the progress of implementation by simple and rapid feedback systems. As in the low-size–high-scale project, sustainability will be heavily influenced by effective communication of achievements. In this type of project, obtaining the textbooks can present complex problems. Many attempts to implement programs to improve quality have faltered on the rocks of textbook procurement. Bulk procurement is often difficult, and the adjustments and changes during project implementation call for frequent tendering and contracting.

Progress in both the mechanical and the routine stages makes new demands on teachers. Evaluating the impact on student achievement and the reaction of teachers to newly developed curriculums is essential in every program of any substance. The educational professionals managing the projects are typically in close contact with the local implementers. Uncertainty is high, and pro-

Table 4-3. *Implementation Strategies*

	Project type		
	Low size–high scale	*High size–low scale*	*High size–high scale*
Project type.	Providing textbooks for existing curriculums.	Testing new textbooks for innovative curriculums.	Providing new textbooks, introducing innovative curriculums.
Implementation task of delivering the program.	Centralized; dissemination of well-structured directives to local implementers; supervision of compliance with work procedures.	Intensive central management by specialized professionals; monitoring and evaluation crucial; less direct supervision of local implementers.	Operational management decentralized, allowing for participation of local implementers.
Implementation task of sustaining the program.	Developing competent central agencies; building grassroot support with rewards for compliance; publicity for achievements.	Increasing cost-efficiency of program; piloting larger-scale applications; attention to stability of commitment to project goals of key supporters; building professional support group.	Developing competent central and local implementing agencies; building support systems for local implementers; frequent publication of results.
Dealing with uncertainty.	Insulating project from unstable environmental influences; more detailed planning and instructions handled by local implementers.	Solve problems as they occur; frequent personal contact between managers and implementers; readiness to revise objectives and implementation strategies.	Open-ended design; flexible implementation strategy; local-level authority to adjust resource allocation; rapid data feedback system; learning by doing.
Input procurement.	Standardized, large-scale often done by specialized staff; dominant task of project implementation unit.	Small scale and cost marginal to project success.	Crucial precondition for project success; batch procurement with changes as implementation proceeds; specialized staff nearly always required.
Management system.	Mechanistic.	Organic.	Input procurement: mechanistic; program management: organic.

Source: Author.

gram revisions are frequent and expected. The cost of these experimental and pilot operations is often modest, and so procurement problems are less problematic.

Management Systems

Implementation strategies are important in the design of management systems. (Verspoor 1985 discusses issues relevant to the management of quality-improvement projects.) Table 4-4 illustrates the main features of two organizational prototypes: mechanistic and organic. The low-size–high-scale project is typically managed by an organization with heavily mechanistic characteristics; the small-scale–high-size project is typically managed by a strongly organic organization; and the high-size–high-scale project has features of both.

Conclusions

Textbook projects represent a flexible and effective way of improving the quality of education in developing countries. Texts serve a variety of objectives under a variety of conditions and at all stages of a country's educational development. Textbooks are familiar and nonthreatening to teachers. They are relatively inexpensive and require little or no maintenance. They are ideally suited to progressive diversification and individualization in the classroom, which is the dominant objective of most programs to improve quality (yet the one presenting teachers with the most difficulty). Improvement in quality is a gradual and continuing process. Textbooks play a critical role in supporting this process at the classroom level. Ultimately, stable funding and strong institutional management of textbook

Table 4-4. *Mechanistic and Organic Forms*

Mechanistic	*Organic*
Tasks are broken down into specialized, separate tasks.	Employees contribute to common task of depart- t.
Tasks are rigidly defined.	Ta , are adjusted and redefined through employee interactions.
Strict hierarchy of authority and control. Many rules.	Less hierarchy of authority and control. Few rules.
Knowledge and control of tasks are centralized at top of organization.	Knowledge and control of tasks are located anywhere in organization.
Communication is vertical.	Communication is lateral.

Source: Author.

development, manufacturing, and distribution are necessary to support the process of improving educational quality.

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Part II

Policy Issues in Textbook Program Development

The four chapters in this part analyze in more detail a selected set of the policy issues or problems outlined in part I.

As noted in chapter 1, an overarching policy choice relates to the balance between public and private activity in textbook development. In chapter 5, Savaran Gopinathan discusses the complex and often conflicting relations between private and public textbook publishing. Although the illustrative material is drawn from Asian nations, the general issues and patterns appear to be common throughout much of the developing world. Gopinathan notes the historical reasons for the great increase in public activity in recent years in developing nations and the problems and constraints that this has produced among private publishers. He discusses the advantages and disadvantages associated with each kind of publishing and printing, and he argues for a balance between the two.

In the United States, textbook publishing is the responsibility of the private sector. As Harriet Tyson-Bernstein points out in chapter 6, however, even in this strongly market-oriented and wealthy nation, indirect government control of textbook content and design is pervasive. Because of the highly decentralized, multilayered U.S. educational system, private textbook publishers are caught in the middle of social and ideological conflicts which are played out in the political arena. This, along with the misapplication by educators and legislators of "scientific" educational principles (for example, readability formulas), has produced a situation in which seemingly good pedagogical and social ideas are often converted into educationally inferior textbooks by publishers who, if they are to remain in business, have no choice but to bow to all the conflicting pressures. Chapter 6 describes patterns which poorer nations would be well-advised to avoid as they develop their own textbook systems. It also indicates that the choices and problems discussed in this book are not unique to the developing nations; they must be faced at all levels of development.

One of the most complex and least understood problems in textbook development is national and international copyright. In chapter 7, Philip Altbach thoroughly discusses the current status and historical development of international copyright arrangements, which are seen by some developing nations as impediments to the free flow of information and a means by which the already powerful creators of knowledge maintain control over its production and distribution. At the same time, participation in and respect for international copyright conventions are important for the development of viable domestic publishing operations. Altbach notes that national attitudes toward copyright tend to change over time, that there are several distinct models of copyright legislation with different underlying understandings of the appropriate balance between private

and collective rights and obligations, and that fewer and fewer nations are ignoring copyright provisions. At the technical level, both domestic and international copyright laws are highly complex and evolving. Specialized legal advice should be sought about copyright law when embarking on a textbook development project.

Paper supply problems have seriously interfered with the schedules of many textbook programs or significantly increased their costs. In chapter 8, Paul Eastman reviews the current and predicted world supply and demand for paper, notes the difficulty that many developing nations have encountered in acquiring adequate, timely, and least-cost supplies of paper for their textbooks, and outlines several strategies for overcoming these problems.

5

And Shall the Twain Meet? Public and Private Textbook Publishing in the Developing World

Savaranan Gopinathan

In developing countries, the relation between the private and public sectors in the production and dissemination of textbooks is a complex one.[1] The increasing participation of governments, in some instances with the support of multilateral agencies, is an important force in the provision of textbooks. This participation has not been universally welcomed, however, and in some countries there exists a state of misunderstanding and even confrontation between public and private officials. A more collaborative effort is required to meet effectively the enormous challenge of providing textbooks.

This chapter addresses three topics. The first section focuses on the various factors that influence textbook production and distribution in developing countries. It is not possible to understand present-day publishing problems without reference to historical, educational, cultural-political, and economic factors and, more important, how they interact. Naturally, these factors differ from country to country, and recommendations for change must be sensitive to this variation.

The second section is concerned with the relation between textbook publishing and general publishing. Broad policies related to publishing need to consider both domains, bearing in mind that the needs, requirements, and forces impinging on each domain differ (for example, the government is far more interested in textbooks than in general publishing). Yet the two domains are linked, and policies proposed for one will likely influence the other.

The third section provides a scheme for analyzing public-private relations together with a typology of relations and the consequences likely to flow from them. Illustrative examples are drawn from different countries.

The Importance of Textbooks in Education

In spite of the changes in educational philosophy, aims, and pedagogy that have permeated school systems in the developing countries, the central importance of the textbook has not been seriously diminished. Indeed, there appears now to be a renewal of interest based on empirical evidence of the importance of textbooks in academic achievement. As Heyneman, Farrell, and Sepulveda-Stuardo (1978) stated, "From the evidence so far, the availability of books appears to be the most consistent factor in predicting academic achievement. It is positive in 15 out of 18 statistics (83 per cent). This is, for example, more favorable than the 13 out of the 24 (54 per cent) recently reported for teacher training." Aprieto (1983) cites a Philippines Textbook Board study indicating that children who use books achieve more than those who do not, and children who use project textbooks consistently achieve more than those without this advantage.

Governments know that history and civics textbooks are valuable for promoting national identity. In many developing and some developed countries, the government has assumed control over the publishing and printing of textbooks so as to ensure that they serve a nationalistic purpose.

Several developments in the recent past have thrust the preparation, printing, and distribution of textbooks into the forefront of educational debate. Education has attained the status of a universal human right, and in the developing world, educational systems have greatly expanded. As a consequence of such expansion—of swelling numbers and curricular diversification—considerable pressure has been imposed on textbook production. And because governments are more and more

concerned with qualitative improvements in education, they must also be concerned about textbooks.

Clear policies must be developed about textbooks and their place among other educational resources. In many countries, lack of coordinated planning has left the textbook industry in a sorry state. The textbook has been challenged by instructional innovations—radio and television, programmed learning, multimedia packages, and language laboratories, among others. All these innovations have failed to hold their own against the textbook as the prime pedagogical tool in the classroom. As Pearce (1982) has noted, they "have stimulated further the demand for textbooks rather than replacing them."

The advent of the computer, however, poses new educational challenges. In some city schools in the developing world, computer-assisted instruction is being introduced and computer studies have become part of the curriculum. Funds earmarked for the library are being redirected to purchase computer systems and software. The computer's versatility in both educational and recreational contexts presages an even greater future impact on the classroom. What consequences will the computer have for the textbook? Will the floppy disk ultimately provide a cheaper medium than paperbound materials? Is this the time for heavy investments in printing capacity or software production to meet future educational needs? Developing countries must make realistic long-term plans and keep their options open. (These questions are considered in detail in chapters 15 and 16.)

Finally, the new infusion of funding from multilateral agencies for textbook production needs to be carefully examined. For example, between 1979 and 1983 the World Bank funded twenty-nine projects with textbook components. World Bank loans to the Philippines for textbook projects exceed $100 million and have resulted in the manufacture of 33 million copies of eighty-four new titles. The funding of government agencies at these massive levels, together with the importation of printing equipment and the development of new distribution networks, naturally has considerable impact on national publishing and printing infrastructures. Few countries have contingency plans for coping when the aid programs come to an end.

The textbook production and distribution industry in the developing world is confronting major changes and challenges. Government involvement is not always welcome and is not automatically efficient. Although many improvements have taken place—most impressively the development of an indigenous capacity to write, edit, publish, and distribute textbooks—many serious problems remain, particularly in the relation between public and private publishing.

In attempting to solve these problems, there are few analytical studies that offer guidance, hardly any empirical data to draw upon, and no appropriate models to borrow from.[2] (The textbook publishing industry in the United States and the United Kingdom evolved under different historical conditions and sociopolitical assumptions from those pertaining in developing countries.)

Textbook production has many dimensions—historical, educational, cultural, political, economic, technological, and international. At the same time, the health of the publishing industry is of consequence far beyond the education sector. The process of providing books for a population depends on what is administratively feasible and nationally acceptable.

The Historical Context

In most colonial territories, particularly the British and French, textbooks became important with the introduction of the colonial educational system. This system required the mastery of a body of knowledge contained in textbooks and measured achievement by annual examinations. The annual examinations regulated promotion to advanced grades where new content had to be learned, and new textbooks were required. The introduction and adoption of this educational system is the historical basis of the modern textbook industry in the developing world.

The colonized territories possessed little capacity for writing or producing textbooks, especially because most available presses were devoted to printing newspapers and religious tracts. Almost all the textbooks for use in the system had to be imported. In many of the British colonies, such publishing houses as Oxford University Press, Longman, Heinemann, and Macmillan were established essentially as importers of the textbooks used in Britain. With some variation, many of the British texts of the early 1950s—like Durell's *General Mathematics*, Ridout's *English Course*, or Mckean's *Biology*—were used without adaptation well into independence. There were several reasons for their continued use: the inferiority of texts produced indigenously, the lack of text writing expertise, the continuance of the Cambridge University Overseas Examination system, and the use of expatriate personnel at the ministry of education (Gopinathan 1976). Foreign publishers (generally branches of publishers based in the first colonizing countries) continued to dominate and control the textbook market, even when school curriculums were revised, often with the aid of expatriate educational advisers. For an intermediate period, British textbooks adapted with scissors and paste were promoted and eagerly accepted. The links between expatriate curriculum advis-

ers and foreign textbook publishers were often very close, and these links could be and often were exploited for commercial gain.

Although foreign publishers reaped vast profits (even today, major British textbook publishers depend for their survival on exports), they were also responsible for introducing the needed expertise in the indigenous publishing industry. These publishers trained the early writers, editors, illustrators, and printers in the finer points of textbook production. In addition they initiated both general and academic publishing with childrens' books and postgraduate dissertations. Such was the role of Oxford University Press, Heinemann, and Longman in both Malaysia and Singapore. But few publishers paid much attention to general publishing and even fewer to publishing in indigenous languages.

The entry of government and commercial publishers into textbook publishing was determined by other considerations. After the departure of the colonists, independent governments became involved in providing books to schools, preparing teachers, establishing national examinations, and revising curriculums. National priorities included encouraging enrollment, sustaining expansion, and maintaining quality. In the early phase, there was little textbook production, because the funds were not available. At first, the concern was to impose some form of supervision over textbooks used in the schools. One result was approved book lists, which cited both imported and local titles that had been vetted and found suitable for schools.

Several factors triggered more extensive government involvement. Among these were the introduction of a second-language curriculum to reflect the changed sociopolitical circumstances and ethnic or regional pressure for educational representation. Textbook prices, availability, and distribution to rural regions became political issues. Commercial publishers made few efforts to improve quality, and some were seen as indulging in corrupt practices. There were many motives for greater public involvement—some honorable, some forced by political and economic expediency. In most instances, government decisions addressed the immediate problems rather than the long-term implications.

Indigenous commercial publishers entered the textbook market largely for profit, encouraged by the success of the foreign publishers and seeking to carve out lucrative niches for themselves. Many Indian publishers, for instance, began business as printers or book importers. Typically, they began in primary-level publishing, with practicing teachers as their authors and with sympathetic consideration from their governments. Many of them were also involved in library and stationery supplies or in running the school bookshop. The distinction between book publisher and bookseller is more blurred than the distinction between printer and publisher. Many indigenous publishers remained small and undercapitalized, whereas a few went on to develop considerable expertise.

This pattern of evolution has contributed to the troubled relation between government and commercial publishing. Essentially the foreign publishing houses have the most to lose from government intervention. A survey conducted in India found that at least half the publishers surveyed felt they could survive without textbook publishing (National Council of Applied Economic Research 1976). In Malaysia, even when the Dewan Bahasa dan Pustaka (Language and Literary Agency)[3] controlled the core textbook market, many enterprising indigenous publishers developed strengths in peripheral areas (for example, teacher manuals, test materials, workbooks, and supplementary readers). In general, however, the few indigenous publishers in developing countries serve only limited markets, and any loss of market share has serious consequences for them.

The Educational Environment

The provision of textbooks is affected by changes in the educational environment. In the last two decades, education has been dramatically transformed in the developing world. By the early 1960s, many newly independent countries recognized the inadequacy of the liberal arts curriculum and introduced technical-vocational education. Because training had to relate to the particular country's emerging industrial infrastructure, to available materials (timber, cane, and so on), and to the equipment in school workshops, curriculums and textbooks had to be country-specific. In Malaysia and Singapore, some of the early textbooks for industrial arts were written by local teachers. Equally significant were the changes in history and civics, depending upon the circumstances under which independence was won. Where independence came as a result of struggle, as in India and Indonesia, the changes were more extensive. Understandably, the ministries of education were closely involved, and manuscripts were locally written and printed.

Another element in curricular change was the recognition of widespread inadequacy in the structure of the curriculum. This recognition was the result of several factors. new guidelines from examination authorities, major curriculum reform projects in foreign countries (as with the reform in science education following Sputnik), changes in methodology in traditional subjects such as English language teaching, and the gradual introduction of a national literature. Sometimes, too, new subjects were introduced to accommodate new educational needs—for example, domestic science was

introduced to cater to the large numbers of girls who entered the educational system from the 1960s onward. Although such changes were often introduced before the textbooks were available, they provided an opportunity for local writers and local publishers to enter the textbook market.

Another momentous curriculum change reflected the new approach to language education. In some countries (for example, Malaysia), the indigenous language came to be used as the medium of instruction, whereas in other countries (for example, Singapore), it was taught as a second language. In countries such as the Philippines and India, decisions involved a number of indigenous dialects as well. In countries such as Thailand (where the indigenous language was always the main medium of instruction), recognition of the importance of English led to the demand for relevant English language texts. Although there were many national variations, the common factor was the need for new materials.

New markets were created for publishers, but these generally were small (for example, the market for Tamil-language books in Singapore). Producing books in these languages presented both pedagogical and technical problems. In some instances, scientific vocabularies had to be developed in these "new" languages and new typefaces created.

Cultural-Political Influences

The desire to set history straight and to utilize indigenous languages represents the outward manifestation of a new nationalism in education. In many developing countries, independence presented a huge political challenge, with governments having to fashion a unified political and cultural identity out of disparate ethnic groups. Political leaders sought to control education as a means of creating a national identity. In many countries that meant control over private and ethnically separate schools. Textbooks were seen as a means of instilling common histories and experiences, and nationally administered examinations as a means of ensuring uniform quality and standards. For instance, in India and Malaysia, the concern was not (as in the West) to maintain choice and plurality but rather to emphasize the commonalities of the national experience and to promote unified national goals. (In many countries, this is something that has yet to be achieved.) Concern is heightened by the fact that high book prices, late delivery, or (in the case of outlying regions) no delivery can become political embarrassments. Such facts have to be considered when questioning government involvement in textbook publication.

Economic Constraints

The capacity of a nation to provide adequate textbooks to meet the needs of its educational system depends on its level of economic development, in particular the capacity and sophistication of its printing industry. Almost all developing countries need to import paper, printing equipment, and inks—a drain on foreign exchange. Financial resources also determine how much writers are paid for preparing manuscripts and whether publishers and booksellers can secure adequate credit facilities. Only in the larger countries, or those with better than average economic growth, do publishers exist in strength, and there only a handful of companies are capable of producing an adequate range of titles.

The recent decade has not been kind to textbook production efforts of developing countries. As enrollment has increased, the priorities have been schools and teachers. Government involvement in textbook production belongs to a later stage of educational development. Malaysia, for example, has schemes to make free textbooks available to large numbers of students to overcome the major problem of their high cost. There is understandable reluctance to allow commercial publishers and printers to profit from such a policy.

The International Factor

With the adoption of colonial educational institutions came one-way commercial and ideological traffic in educational materials—from the center to the periphery, from the former colonial power to the former colony. Such traffic has only slightly diminished in intensity. Although developing countries have been able to substitute locally written materials at the elementary and secondary levels, the growth in literacy and the expansion of higher education have sustained demand for imported books. In addition, developing countries continue to rely on the educational expertise available from more advanced countries, and often when educational innovations are transferred (for example, modern mathematics or science), educational materials are transferred as well.

Other examples of internationalism in the production of curriculum materials are the efforts of the United States, the United Kingdom, and the U.S.S.R. to subsidize inexpensive editions for higher education in the developing countries. The U.S. scheme has resulted in the publication of 12 million copies of U.S. titles in fifty-seven languages. In 1983, the Soviet Union exported 24 million copies of books in English, and it currently prints more than 2 million books a year in thirteen regional Indian languages. Though such schemes resulted in a variety of cheaply available books they

were criticized for their impact on the development of an indigenous publishing industry.

Recent World Bank initiatives in assisting textbook schemes in selected countries have led to the introduction of new elements in production and distribution. The issues of copyright and book piracy have triggered confrontations between publishers of various nations. Finally, there is the concern of U.S. establishment circles to make books a major tool in the ideological war between the capitalist and socialist political systems.[4]

The Relation between Textbook and General Publishing

Both cultural and economic factors are pertinent to textbook and general publishing. In countries such as Malaysia and Indonesia where cultural identity and integrity have been ravaged by the colonial past and by contemporary cultural neocolonialism, the publishing industry is a vital aspect of cultural recovery and nationalistic sentiment. In Malaysia, for instance, the decision to make Bahasa Malaysia the national language and major medium of education led to several other consequences. The Dewan Bahasa dan Pustaka was established to help develop the national language, produce textbooks and reference materials, and promote literature in the national language. As a result, both textbook and general publishing have benefited. The Dewan's language development work has influenced scholarly discourse, and its dictionaries have helped standardize the language—a boon to textbook writers. Many of the textbook writers and editors who were first employed by the Dewan have gone on to other publishing houses to develop both textbook and general publishing programs. The conscious effort to promote literature has had an enormous effect in both educational and literary spheres. The best literary works soon became recommended school literature texts, and the exposure of a large number of young Malaysians to such works created a demand for other works in their language. Writing, reading, and publishing in the national language in Malaysia is on the increase, and both educational and general publishing are benefiting.

National economic limitations apply to the development of general publishing. The need to publish textbooks in quantity led to the development of the infrastructure for general publishing. It was textbook publishing that provided the writers, editors, illustrators, printers, designers, and so on to the industry. General publishing, more demanding of skills in writing and production, attracted the best of them. When foreign publishers dominated the textbook market, they seldom used their profits to develop general publishing. In the few instances where such investment was made, it was marked by hesitancy and abandoned when problems arose.

The constraints in publishing textbooks drive some publishers in developing countries into general publishing. But general publishing has its problems too: it requires a high level of skills; markets are small; good manuscripts are few; and general books lack a clearly defined market.

In free-market or semisocialist economies, it is the private publishers who venture into general publishing. There the government generally confines its direct publishing activities to textbooks and a small range of official publications. Such ventures can be successful—in Singapore, for instance, a Ministry of Culture publication entitled *Singapore: An Illustrated History, 1941–1984* sold more than 20,000 copies within a year. It is, however, generally the private publisher who is attuned to market needs and willing to take the plunge. Often the contacts established with school librarians while selling textbooks and reference materials alert the publisher to market needs and the profits to be made by imported books. A monolithic government publisher lacks the flexibility to produce a small but varied range of titles on diverse topics in response to subtle market trends. It is the commercially oriented publisher who translates the broad cultural objectives of the government into books on history, politics, religion, fine arts, and biography.

Library facilities are another important factor. In developing countries, institutional purchases are vital to general publishing, and here government support is essential. Once again government and private interests and actions are closely interwoven.

Features of Public and Private Publishing

The prime reason for government involvement in textbook production is control over the educational system. The ministry of education is responsible for the educational goals of the nation. The deficiencies in some private efforts prompted greater government involvement in textbook production. In Singapore, greater government involvement in education resulted from a major report which recommended comprehensive changes, new textbooks, and retraining of teachers in order to achieve the revised education goals. In Malaysia, the introduction of an indigenous language created challenges that the existing publishing infrastructure could not meet. In the Philippines and Indonesia, the expansion of the educational system caused massive demands for textbooks which could not be met without government involvement. Beeby (1979) has noted that in Indonesia, even in Grade 6 where textbooks would seem

to be completely essential, only 40 per cent of the students in the poorer provinces had a book of any kind." Aprieto (1983) comments that a review of textbook provision in the Philippines found:

> Supply was irregular, insufficient and the quality often poor. Development of new textbooks for publication took an average of six years. It was estimated that in the public schools in any subject, there was only one book for every 9.8 pupils in Grades 1–4, one for every 11.5 pupils in Grades 5–6, and one for every 8.5 pupils in secondary school . . . Most available textbooks were substandard physically and pedagogically . . . illustrations were often more than 10 years old.

Furthermore, the greater demands on the educational system and the poor economic growth in the 1970s combined to make the situation worse. What was needed was a coordinated response to the problem: integrated planning and the systematic growth of production, printing, and distribution infrastructures. Both the printing and the distribution of massive numbers of textbooks are large logistical problems. For example, India's yearly requirement of 200 million textbooks calls for immense paper stocks, high-speed printing and binding capacity, and an efficient distribution system. In many developing countries such capacity simply does not exist. In the Philippines, the Textbooks Board Secretariat had to establish separate provincial warehouses in addition to the central Metro Manila warehouse to ensure that the books were efficiently distributed.

There are, however, disadvantages to government involvement in the publishing and distribution of textbooks. A large bureaucracy tends to be slow-moving and cumbersome. Linking publishing to the national economic plan can make it vulnerable to fluctuation in the budget. It may become necessary to adhere strictly to government rules on expenditure (for example, tender systems). Although certain economies of scale favor the coordination of printing and distribution, there are many hidden costs to government involvement. For example, the wages and overhead of government employees and departments employed in publishing, printing, and distribution may not be included in the cost accounting. Another limitation is that government publishing officers are remote from their colleagues in the commercial sector and may be ignorant of current trends and realities. Pearce (1982: 6) has summed up the lack of integrated planning in government publishing:

> It appears that government TPOs (textbook publishing organizations) have not always been planned as a component of a program to produce all the books needed for life-long education, or as a well-defined integrated part of the book publishing industry as a whole. Often enormous resources have been poured into school textbook schemes by governments in LDCs but insufficient thought has been given to how school leavers would maintain their literacy, how libraries would be established, what the effect of the textbook program would be on private-sector publishers, and what the role of the bookshops is in the community.

Conversely, commercial publishers are small scale, able to be flexible and responsive to changing needs, and able to handle small runs for specialized markets, maintain low overheads, and keep prices down. Their profit motivation gives them a strong incentive to be efficient, and their diversity ensures a varied output.

Successful commercial publishers often discover and expand an export market for their books. Several publishers in Singapore and Malaysia have turned multinational in just this way. One Singapore publisher who began as a bookseller and small-time Chinese publisher was later successful at English-language publishing and has been involved overseas through branch offices in Malay- and Tamil-language publishing. Such expansion is possible for private companies able to establish legitimate branches in another country, whereas government-sponsored books tend to travel poorly.

The Interaction between Public and Private Publishing

The interactions among many elements and institutions make the relation between public and private publishing very complex. One way of mapping textbook preparation, production, distribution, and use is indicated in figure 5-1, which identifies nine processes and fifteen stakeholders.

The relative influence of the stakeholders depends on the peculiarities of the national context. In Singapore, for example, parent-teacher associations and subject associations exert little influence, whereas the influence of educational administrators and curriculum developers is considerable. In Malaysia, where the medium of instruction is both an educational and a political issue, institutions like the Dewan and the universities can exert considerable pressure. If figure 5-1 is adapted to the particular national context, it can be useful in analyzing the situation and teasing out the linkages.

The textbook provision process can be disaggregated into four core stages and two supplementary ones. The first stage involves the establishment of educational policies and guidelines for curricular materials. Such guidelines could be related to the use of various languages in education, teaching methods, schemes to provide textbooks free or on loan, funding levels for school library purchases, and procedures for the vetting and approval of textbooks and supplementary materials. In addition to official specifications for curriculum ma-

Figure 5-1. *Factors and Processes in Textbook Preparation, Production, Distribution, and Use*

Administrative factors / Textbook publishing elements and processes	Education administrators	Schools/ teachers	Parent-teacher association	Subject association	Teacher trainers	Writers, writers' association	Illustrators	Pupils	Printers, printers' association	Research findings	Aid agencies	Publishers' association	Libraries	Booksellers	Language association, creative writers' association
1. Establishment of education and curriculum policies, for example, medium of instruction, selling of textbooks, pupil-textbook ratios, book loan schemes. 2. Specifications for curriculum materials															
3 Preparation of core and supplementary materials Selection of content, approaches, format Selection of writers and illustrators Editing															
4 Printing, quality, delivery dates, technical expertise, printing supplies 5. Pricing 6 Vetting															
7 Distribution Centralized Decentralized															
8 Evaluation, revising, updating															
9 Teacher training															

terials (in some countries there are detailed physical specifications), there are concerns about their utilization. The orientation and retraining of teachers are significant matters involving the ministry of education (MOE) and curriculum development committees. Training in the use of the new materials is generally the responsibility of teacher training institutions.

In chronological order, the four core stages in the provision of textbooks are preparation, printing and pricing, distribution, and evaluation and revision. Preparation entails the selection of content to meet curricular goals, the choice of methodology, the recruitment and supervision of writers and illustrators, and decisions on format and final editing. This stage, like the evaluation and revision stage, is concerned with issues of educational quality and appropriate, up-to-date pedagogy. In countries that do not have a large and developed educational infrastructure, foreign consultants may be used. At the preparation stage, cultural and educational issues dominate. Disputes over examples, illustrations, fair representation of minority groups, or the quality of language in the texts typically occur.

In the printing and pricing stage, economic concerns dominate. In many countries, printing is more efficient, perhaps because some of the basic skills can be learned on the job and because equipment has been upgraded for commercial printing. There are often more training opportunities for printing industry personnel than for illustrators or writers. Even so, the huge demand for textbooks and high cost of paper stocks are beyond the capacity of most printers in developing countries. Textbook pricing depends on both guidelines from the MOE and printing costs. The vetting stage varies from country to country; most MOEs must approve all texts for school use. In some countries, the fully printed text is required; in others a sample printed section and manuscript is sufficient. In some instances, there is a charge for review, depending on the education level.

The printing stage is followed by distribution. The magnitude of the distribution problem is determined by the size of the country, difficulty of access, and the transportation network. Because printing presses are generally located in the urban centers, distributing books to outlying areas may present a problem. The distribution system is also affected by schemes to lend books; when the books are not sold through bookstores, they can be shipped directly from printer to school.

Finally, there is the evaluation-revision stage. This is without doubt the most neglected. Very few publishers, public or commercial, recognize the value of systematic evaluation. When books are replaced, it is usually because the curriculum has changed rather than because evaluation has indicated flaws.

The complexities of the book provision process are influenced by the roles, needs, and wants of a large number of institutions and associations. To take just one example, decisions about the role of the private sector in education influence the roles played by various other institutions. Where the government alone determines the curriculum, a tender system is used to select publishers. Often both the individual publishers (as competitors) and their trade association (representing the members' interest) will be involved in regulating the tender system. Similarly, the price constraints on publishers will influence printers or printers' associations where large quantities are required. The particular national context determines the optimal public-private relation.

A Typology of Public-Private Relations

Three broad types of public-private relations exist—public monopolies, private monopolies, and a combination of the two. Table 5-1 displays the complex relations in a small sample of countries. Most countries tend toward greater rather than lesser public involvement in textbook production, with Viet Nam being the best example of extensive government involvement. Most countries fall into the mixed category, with different patterns of interaction at different stages.

Public Monopolies

In a public monopoly, the government controls the production of textbooks. Almost complete control is likely to be exercised over curriculums and curriculum materials. Printing and distribution are also likely to be centralized, but some private involvement may be permitted under strict supervision and cost controls. Teachers and schools in the educational system will be required to take on such additional responsibilities as writing and illustrating textbooks (with little prospect of royalty) and assisting in their distribution. There is little scope for professional or industrial organizations, such as teachers' unions and writers', printers', and publishers' associations.

Public control has both benefits and disadvantages. Benefits are great in the development of textbooks, and disadvantages are great in printing and distribution. Close control over the curriculum and content of texts can lead to a closer fit between educational objectives and teaching materials. A systematic program to train teachers in the use of new pedagogy and curriculum materials is more likely. The public sector draws on more specialists—curriculum specialists, teachers, teacher trainers, evaluation specialists, and the like.

Although lower costs may result from economies of

Table 5-1. *Range of National Practices in Selected Countries for Publishing of Primary Texts*

Country	*Supervision*	*Publication*	*Distribution*	*Implementation*	*Evaluation*
Bangladesh	National Curriculum and Textbook Board (NCTB)	NCTB	NCTB	NCTB Directorate General of Primary Education according to policies laid down by MOE	NCTB (Directorate General of Primary Education) subject committees (including teachers and headmasters)
Maldives	Education Development Centre (ECD)	ECD	ECD, MOE	ECD, MOE teachers	ECD (Principals, headmasters, teachers)
Nepal	Curriculum, Textbook	CTSC and Janak Educational Material Centre	Government printer, Department of Education	School Advisory Services Department inspector	Inspectorate, MOE Subject Specialist
Republic of Korea	MOE, Board of Education, a. d Korean Educational Development Institute (KEDI)	MOE, KEDI, and National Textbook Compilation Company (NTCC)			
Viet Nam	Department of General Education	Educational Publishing House	Textbooks Distribution Agency	Department of General Education, teachers	Textbooks Evaluation Board of the Ministry of Education
Sri Lanka	Educational Publications Development (EPD)	Publishers, EPD	Chief editor, distribution unit	Circuit education officers, principals, teachers	Curriculum Development Centre (CDC)
Thailand	Office of National Primary Education Commission (ONPEC) and Office of Private Education Commission (OPEC), MOE	Department of Curriculum and Instruction Development (DCID) and Kurusabha Printing Enterprise	Kurusabha and DCID	DCIC, OPEC, and CNPEC Laid down by MOE	DCID
Malaysia	Central Curriculum Committee (CCC)	Publishers	Publishers	CCC	Textbook Bureau and subject specialists
Singapore	Curriculum Development Institute of Singapore (CDIS), Ministry of Education	CDIS, publishers	Publishers	MOE	MOE, CDIS

Source. Adapted from Unesco (1985).

scale and centralized purchase of paper, in many developing countries public printing capacity is grossly inadequate. Bureaucratic rules, competing government priorities, and general mismanagement cause delays and result in insufficient book quantities, all of which can outweigh the cost advantages of centralized printing. The same problems are likely to arise in distribution. Government transportation facilities are prey to conflicting needs and cannot always be relied upon. Where there is a public monopoly, private facilities will be poorly developed and unable to take up the slack.

Private Monopolies

Because education is so important to the state, completely uncontrolled private textbook production does not exist. Within each stage of textbook publishing, there are areas of most and least private enterprise. In predominantly private situations, the government continues to control curriculum decisions while commercial publishers make the major editorial and production decisions—which levels (primary, secondary, postsecondary) to concentrate on, which languages to publish

in, and the range of supplementary materials. Teachers (as writers), illustrators, and designers are recruited on a competitive basis, and a free market in the offer and purchase of skills exists. However, commercially produced materials need to pass vetting boards before being accepted in schools. In some instances, governmentally imposed price ranges constrain commercial publishers. Active participation by professional and industrial organizations in the whole process of textbook production is characterized by more finely tuned decisionmaking structures.

With private dominance, printing and distribution operations and facilities are decentralized and are distinct from (although still controlled by) the publishing operation. A competitive free market in printing services exists. Though the printing capacity of single companies may not always be adequate, flexible commercial arrangements can be made. Distribution is likely to take place through both school bookshops and other retail outlets.

The greatest benefits of avoiding extensive government involvement in the textbook process are the availability of a range of curricu'um materials, less curriculum orthodoxy, and a lack of heavy-handed bureaucratic involvement. An efficient private publishing industry results in a variety of supplementary reading materials. The private sector demands efficiency and innovation and must respond to markets. Publishers, printers, and booksellers may need to develop a leaner, more cost-effective operation.

There is, however, no guarantee that private publishing always has such happy consequences. The pursuit of profits can lead to high book prices so that although a variety of titles is available, they may cost more than individuals can afford. Printers can pursue more lucrative commercial options, and demand can escalate general printing costs. There is also less systematic pilot testing of materials and revision based on feedback—often because schools under government control will not cooperate.

Mixed Patterns

In the middle of the continuum between complete public control and private dominance are a range of intermediary models. Three such combinations are described in the following paragraphs.

1. The government is responsible for both curriculum and the preparation of manuscripts; however, the government does not print or distribute the books. Instead, publishers tender for the editing, publishing, and selling of books within a predetermined price range. There is an opportunity for shared involvement in running workshops for teachers to use the new materials.

2. A government agency prepares, prints, and may distribute books; however, private publishers may compete with the government agency. Private publishers must still run the gauntlet of the vetting process and price their books in relation to subsidized government publishers. Often the competition is not equal because school administrators tend automatically to choose books prepared by the government agency.

3. A government-sponsored board uses committees to prepare, print, and distribute books up to a certain grade level (usually lower grades are of most concern to governments). Commercial publishers are allowed to provide materials for grades 8–10, but the government receives a 7.5 percent royalty and also vets manuscripts before publication. This is the system in Bangladesh.

The mixed private-public model is the norm. The degree of government involvement varies according to national circumstances but may change with the introduction of new policies (as in Singapore) or with the involvement of multilateral agencies (as in the Philippines and Indonesia). In the mixed model, both sectors need to work together, acknowledging their respective roles.

Conclusion

Public-private relations in the textbook production process vary considerably. In India, the pattern even varies from state to state. There are, however, six general principles:

1. National textbook production should provide pedagogically sound, attractive, well-printed books on schedule and in sufficient quantity. Agencies responsible for textbook policy should recognize the value of a variety of supplementary materials and enable them to be produced.

2. In each country, different sociopolitical principles govern national policy. In all countries, however, there is a need to make short- and long-term plans for the publishing and printing industries within larger economic plans. Textbook agencies should be staffed with personnel able to undertake the complex estimation and planning required.

3. Where national policy includes private textbook publishers, clearly defined areas of responsibility are necessary. Given the power and resources available to the government, private firms are at a disadvantage. The government should strengthen private firms (including printing firms and booksellers) rather than replace them. Where it is necessary to establish government-run units, ample time and opportunity should be given to private companies to shift to other areas of the textbook industry.

4. Government control and supervision is compatible with private involvement. Professional standards of service

can be achieved by strict controls, rewards for good performance, and assistance to weaker participants. Governments should abandon the hostile view that commercial publishing is flawed because it is profit-driven and should encourage more collaborative efforts.

5. Large government investment in publishing and printing can lead to expansion from education into other areas. Government then encroaches on the private publishing domain. Where a government agency has fulfilled its original mandate and there are private institutions capable of continuing the service, the government agency should either be disbanded or undertake new responsibilities—for example, providing model texts, performing evaluation services, or researching[5] textbooks.

6. Where government has a large role in textbook production, it should maintain high standards of efficiency and be responsive to its impact on the private sector. Government textbook agencies should combine the virtues of both public and private organizations.

The public sector has emerged as a powerful force in textbook production. Rather than dwelling on inadequacies in the public and private sectors or adopting a confrontational attitude, there is an urgent need for each side to acknowledge the different capacities of the other and to work out long-term, stable arrangements to promote collaborative achievements.

Notes

1. The chapter uses the term "developing countries" in a general way. Much of the data and many of the examples are drawn from the Asian experience, and although the comments may well be generalizable, there may be important exceptions in the African and Latin American contexts

2. An exception is National Council of Applied Economic Research (1976).

3. The Dewan Bahasa dan Pustaka was established by the Malaysian government in 1957 to promote the development and use of the national language, Bahasa Malaysia, in all spheres of national life, but especially educationally and culturally. The Dewan is today a major publisher and printer and is involved in research, journal publication, preparation of textbooks, dictionaries and glossaries, and translations, and promotion of literature in the national language.

4. See report in the *Booksell* , March 16, 1985.

5. The term is used loosely. Quite clearly, research findings are not in themselves a factor; it is the use made of them by various stakeholders that makes research potentially significant.

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6

Textbook Development in the United States: How Good Ideas Become Bad Textbooks

Harriet Tyson-Bernstein

The quality of public schools in the United States has become the subject of an intense national debate in the past several years. Although there have been other eras when the U.S. public was dissatisfied with its schools and when reforms were made, the present debate seems much more intense than those in the past.

The current movement for educational reform is focused on the quality of teaching and the standards for entry into the teaching profession. As more is learned from research about the factors that help children learn or that hinder them from learning, textbooks come to the forefront in the national debate about how to improve education.

This chapter describes how the U.S. textbook enterprise has developed over the past 130 years, how the present system works, and why it is producing textbooks that students find boring and confusing. Despite the good intentions of all the parties involved—publishers, legislatures, state and local boards of education, committees of teachers and parents who select textbooks for students--good intentions have produced bad textbooks.

The story is very complicated because the United States has a complicated system of government and is large and diverse. Although both largeness and diversity are blessings, they are also the cause of many difficulties.

Some General Concepts

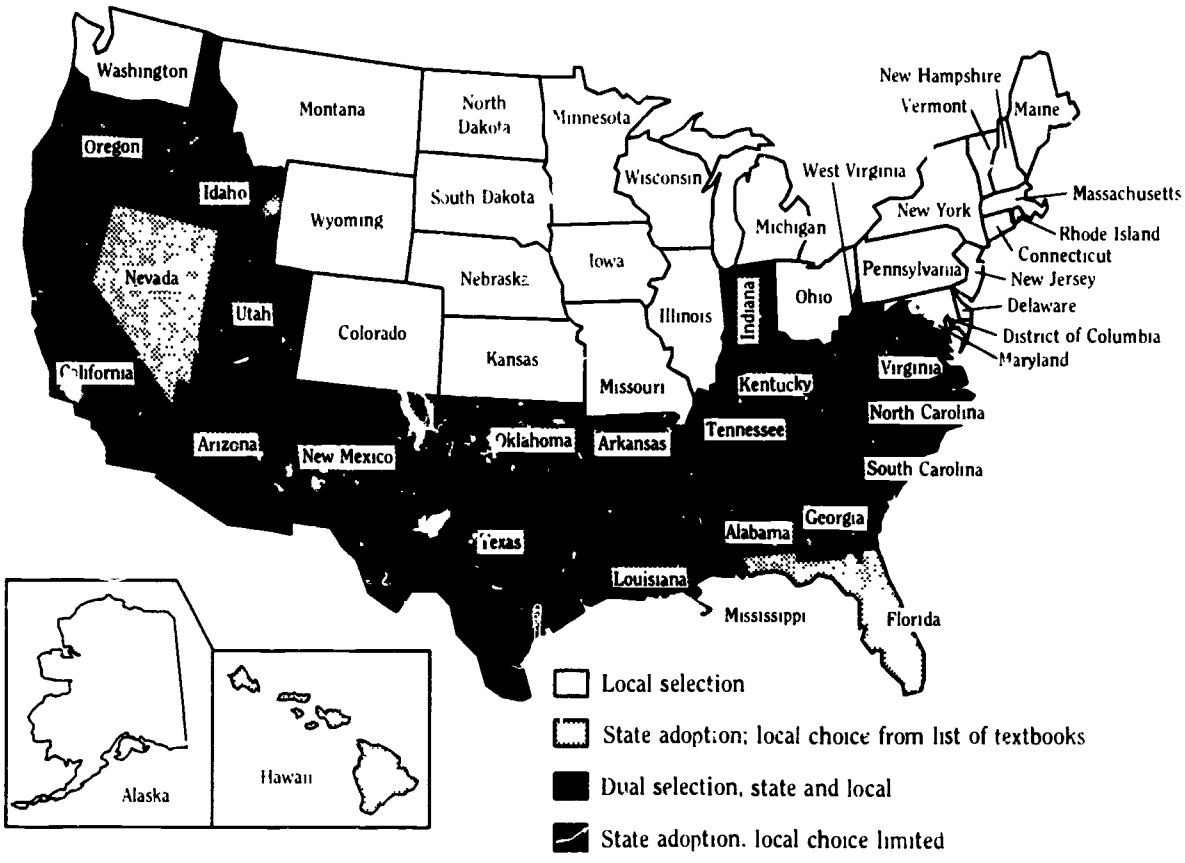
Although many will be familiar with the system of school governance in the United States, it is worth reviewing the seven important concepts that delineate the political and geographical structures of its public schools. The first important concept is that the U.S. Constitution delegates responsibility for the schools to the fifty states. Although the federal government has intervened to protect the civil rights of children who were unserved because of local prejudices and has sometimes offered money to states as an incentive for some kind of improvement, it has been careful to refrain from dictating curriculums or prescribing textbooks.

The second important concept is that the states have less direct control than local school districts. Although the U.S. Constitution gives the authority to the states, that authority has been delegated, by long and cherished tradition, to local school districts. State departments of education may pay for some portion of the costs of running the schools, but generally each local school district taxes its own citizens for most of the cost. State boards of education are usually appointed by state governors, but the local boards tend to be elected by the citizens in that district and are therefore more powerful because they have the support of a large number of people. Americans are generally proud of their local schools, even if they complain about them, and they resist mandates from remote government officials. But textbooks are another matter and an important exception to the tradition of local control.

The third important concept is that in the United States twenty-two of the states assumed direct control over the selection and purchase of textbooks for all their local districts (see figure 6-1). These states, most of them in the South, are called adoption states. The other twenty-eight states are called open territories. In open states, the state authorities honor the tradition of local control and permit local school districts to select their own textbooks.

The fourth important concept is that textbook publishing in the United States is a profit-making, free-enterprise system. Publishers receive no subsidy from governments at any level. They produce whatever will

Figure 6-1. *Methods for Selecting Textbook and Instructional Materials, by State*



Source Author

return a profit. Although most executives of textbook publishing companies are former educators, they are not free to pursue their highest educational ideals. Most companies are owned by larger companies, and the executives of those parent companies insist on profit, not academic excellence.

The fifth concept, and a key one, is that the typical idea of free enterprise does not apply to the production and sale of textbooks. Most industries produce products, and many individuals decide whether or not to buy the products. With textbooks, pure market capitalism is distorted by the state monopoly in the twenty-two adoption states. Three of those twenty-two adoption states—California, Texas, and Florida—are large and populous. Winning or losing an adoption in those three states can make or break a textbook company. Instead of pleasing many individual teachers, the companies must please a political committee which has been given the power to choose textbooks for an entire state. Elected and appointed bodies in those powerful states can dictate the content of textbooks and can even force publishers to submit drafts of books before publication. So great is their economic power that if statewide authorities do not like a word, a sentence, a paragraph, or a chapter, they can force publishers to make revisions.

Following on that point is the sixth concept, which is crucial to understanding textbook production in the United States. Publishers cannot afford to produce a separate edition for Texas and California and Florida. They operate on a thin margin of profit and must sell in as many markets as possible. They produce one textbook designed to please as many states and localities as they can. Thus if Texas wants something removed and California wants something added, those deletions and additions appear in the textbook offered for sale in all parts of the United States.

The seventh concept is that the United States is a nation in the process of profound cultural change. It is still emerging from the political turmoil of the 1960s and 1970s concerning the civil rights of blacks, Hispanics, women, and the disabled. It is in the grip of an intense struggle between liberals and conservatives, between a secular vision and a religious vision, between nationalism and internationalism. At the moment, there

is no national consensus about what kind of nation the United States is. All these hard-fought issues are reflected in the schools and in the content of textbooks. Politicians at the national, state, and local levels, from general government as well as school government, want their beliefs reflected in the school curriculum. Thus, textbooks have become part of the national struggle over cultural identity.

Historical Background of the Textbook Enterprise

Before 1850, students in the United States brought whatever books they had at home to school. Most students attended a one-room schoolhouse, and instruction was ungraded and was individualized according to the books at hand.

After 1850, educators began to pressure local governments for graded, group instruction. Local authorities passed laws and regulations which authorized local schools to determine which books were needed and to direct parents to buy a particular school textbook.

In the 1850s, the United States was still a developing country. Families moved from one place to another in search of land or jobs, and most families were poor. When a family moved from one place to another, the parents found that the textbooks they had bought for their children in one school district were not the same as those required by the school in another district. Because a family usually could ill afford to buy new textbooks every time it moved, students often came to school without books. Educators then began to demand from local authorities uniformity of textbooks across larger geographical and political boundaries. The state was the logical and legal unit for that expansion.

The Free Textbook Movement

At the same time as educators were demanding uniform textbooks across political boundaries, they were also asking local authorities to provide free textbooks. In 1818, in Philadelphia, the first free textbook legislation was passed. By 1884, the Commonwealth of Massachusetts and 19 of the largest cities had enacted free textbook legislation. By 1902, 93 of the 150 largest cities were providing free textbooks, probably because those cities had the highest rates of student mobility. By 1915, 15 states had enacted free textbook laws, and in other states, there were laws which required local school districts to provide free textbooks for poor parents. By 1940, 60–65 percent of the students in the United States received free textbooks, and by 1950, 34 states had free textbook legislation. As in any democracy, these changes did not come easily. There were arguments for and against free textbooks, and there were arguments for and against uniform textbooks.

Arguments for Free Textbooks. Those who favored free textbooks offered the following arguments:

- If education is free, then textbooks should be free as well because they are essential to good education.
- Free textbooks remove the stigma from poor children whose parents cannot afford to buy the books. (One scholar speculated in 1891 that 10–20 percent of the population was excluded from education by the cost of textbooks.)
- Free textbooks allow the school district to change the curriculum when necessary. When the school-owned books are out of date, the district can buy revised editions without placing a financial burden on the parents.
- Free textbooks make possible a uniform starting time at the beginning of the school year. (When parents had to buy the books every fall, it took weeks for them all to get around to it.)
- The textbooks cost less because of volume purchases and the reuse of books from year to year.

Arguments against Free Textbooks. At the time that free textbook legislation was being debated by local school boards and state legislatures, the idea was opposed with the following arguments:

- Free textbooks deplete tax dollars.
- Students do not take proper care of books that are owned by the school because their pride of ownership is removed.
- Reused books might be unsanitary and lead to the spread of disease.
- The handling and distribution of books is burdensome to teachers.

Arguments for Textbook Uniformity. Because the idea of free textbooks went hand in hand with the idea of uniform textbooks, there were also arguments on both sides of the uniformity issue. The advocates of uniform textbooks made the following points:

- Statewide uniformity addresses the needs of a mobile population. When children move from one place to another within a state, their education is not interrupted by a change of curriculum.
- Uniform textbooks make for a uniform course of study and, therefore, cultural unity.
- Uniform textbooks compensate for the weaknesses of teachers.

- Statewide selection is more expert than selections made at the local level.
- Statewide purchasing reduces the costs of textbooks because of volume purchasing.

Arguments against Statewide Uniformity. Opponents of statewide uniformity offered these arguments:

- Textbook uniformity violates the principle of local control.
- The stature of teachers is reduced when they are no longer in control of the tools of their trade.
- No single course of study is best for all students.
- The span of time that state-owned books are supposed to last—usually five or six years—means that local districts are unable to change to a new book when they consider it necessary or desirable.

These were the arguments advanced at the time much of the statewide legislation was being debated. In more modern times, new arguments against statewide uniformity are being advanced, and scholars have disputed some of the assumptions on which statewide adoption of textbooks was originally based. These new arguments are:

- Statewide uniformity of textbooks does not really protect mobile students because most of the mobility patterns in the United States are between states, not within a state.
- For two reasons, the argument about reduced costs no longer makes sense. As time has gone on, cities and towns in the open-territory states have passed regulations requiring publishers to sell books to them at the lowest price charged anywhere else in the United States. These regulations, called most-favored-nation provisions, have forced publishers to charge the same price to everyone, negating the advantages of volume purchasing. The other argument against the cost-savings claim was first advanced by John Dewey, who pointed out that cost had nothing to do with the educational merit of the book. The difference in cost between a good and a mediocre one is usually a matter of pennies, and such trivial savings are irrelevant to the quality of textbooks and to the quality of education.
- The argument that statewide uniformity allows states to enforce curriculum standards has also been challenged in modern times. In the early days of statewide adoption, states would pick just one textbook for each grade or subject, but as time went on state authorities yielded to proliferating demands from local educators for books with various philosophies, pedagogies, and information. States began to approve several books, or even dozens of books, and local boards could then choose the book that suited their particular needs. According to critics of the system, the enforcement of state standards of uniformity overlooked specific local needs and concerns.

The laws that developed in the twenty-two adoption states have also shaped U.S. textbooks. Once the states had decided to adopt textbooks for all the local districts, they began to develop a mechanism for bringing adoption about. Although there is some variation among the twenty-two states, the following summary helps explain how seemingly good ideas have created bad textbooks.

- State legislatures in the adoption states give state boards of education the power to define the curriculum.
- Every adoption state delegates textbook approval to some group. Alabama, for example, gives the power directly to the appointed State Board of Education. Texas, on the other hand, allows its State Board to choose members for the State Adoption Committee, thus providing them with the opportunity for political patronage.
- The state legislatures specify the composition of adoption committees. For example, some states appoint a member of the statewide adoption committee from each federal congressional district. Other states specify that the textbook committee be composed of a certain number of teachers, administrators, and parents.
- The laws in these twenty-two states also specify the number of years that an adopted book should be used—called an adoption cycle. The length of such a cycle is usually five or six years.
- Many adoption states provide for public participation in the textbook adoption process. Publishers are required to establish a depository—one or more locations within the state—where interested citizens can inspect the books being considered. Also, many states permit citizens or representatives of organizations to give public testimony about books under consideration.
- Many states have what are called social criteria for textbook adoption. Books must not portray U.S. heroes in an unfavorable light; books must mention all minority groups in U.S. society and avoid negative stereotypes. California insists that unhealthy foods not be mentioned in textbooks and so publishers avoid stories about a child's birthday party because these stories would necessitate having to mention ice cream and cake, both considered by California to be unhealthy foods. Then, with the growing awareness of the importance of protecting the physical and natural environment,

liberal states like California insist that publishers try to reinforce positive ideas about environmental protection and treat topics like acid rain from an ethical standpoint. Conservative states such as Texas want females portrayed in traditional roles—mother, wife, nurse, and teacher—and resist books which portray women in unconventional occupations. Often, the social criteria of the various states conflict with one another—what is required by one state is prohibited by another. Publishers have been forced to make textbooks increasingly bland and neutral so that no one in any state will find reason to criticize them.

- All the adoption states have some kind of legislation which attempts to control textbook publishers and their sales people. There are restrictions on the amount of time that a salesperson can spend with an adoption committee or with individual teachers. There are limits on entertainment of customers, although such limits are difficult to enforce. There has been a long history of bribery and kickbacks which continues to the present day.
- Many adoption states have laws requiring publishers to post bonds. This provision was designed to protect the state from unscrupulous publishers who, having been awarded a contract, failed to deliver the books. In modern times, this requirement has forced small publishers out of competition for an adoption because they cannot afford to pay the bond costs. Only large publishers can afford the costs of doing business in the major adoption states. In addition, some states require publishers to provide hundreds of thousands of dollars worth of free samples before the adoption, and this provision too has forced small companies out of these major markets.

All these typical laws in the adoption states seemed good ideas at the time they were enacted. Originally, posting bond was essential to protect school districts against sharp business practices. Now, however, the provision eliminates healthy competition.

It may have seemed, at the time, that there were no special knowledge requirements for service on a textbook adoption committee. Adoption committee members were seen in the same light as a jury in a court of law—a number of representative citizens who would render a commonsense judgment. But now, with the enormous advances in educational theory and with a great expansion of knowledge in a variety of subjects, common sense and political representativeness are no longer adequate credentials for the selection of textbooks.

The fact that adoption committees are chosen more on the basis of politics and geography than on the basis of scholarship and pedagogical expertise has prompted many researchers and textbook critics to question the whole system. In short, why is a state committee any wiser or smarter than a local committee when the basis for their selection has little to do with their knowledge of instructional materials? At the time it began, and even today, parental participation in education seemed a good idea. But when so much money is involved in a major adoption state's decisions, the parents who testify about textbook choices are no longer simple parents but representatives of powerful, national organizations. Textbook adoption has become subject to the veto of powerful special interest groups—minority groups, women's organizations, religious groups, and political groups representing the extremes of left and right. Surely the judgments of experienced educators would be preferable to the opinions of those who do not teach and are not held accountable for children's learning. Yet the statutes of only three adoption states require that the adoption committee be comprised either totally or predominantly of educators, and only five states require educators on these committees to have subject matter expertise.

The overall effect of the adoption state laws has been to politicize the selection of textbooks, to deprive individual teachers of the professional responsibility for textbook selection, and thus to contribute to the cynicism of teachers about the political process and to weaken the pride of teachers in their professional responsibilities. The educational needs of school districts in the open-territory states have been held hostage to the decisions of the major adoption states. And because the costs of doing business in the large adoption states are so great and because the loss of business in those states has caused many publishers to go out of business, there are fewer publishers and fewer choices available. Most textbooks look just like all the competitors' textbooks, and adoption committees must choose from a mediocre selection that has been designed more to avoid criticism from special interest groups than to educate children.

California, an adoption state, is the largest single purchaser of textbooks. Texas, also an adoption state, is the third largest purchaser. Even though New York is second in volume purchases, it has little or no influence on textbook content because it is an open-territory state (see table 6-1).

It can be said that the U.S. textbook is truly the creation of public agencies, not of individual authors who set out to write an excellent book. Although there are exceptions to this general rule, these are few. The problem has been further complicated by two more recent developments, as discussed below.

Table 6-1. *Estimated Industry Sales of Elementary and High School Textbooks by State, 1983*

State	Estimated industry sales	Percentage of total sales
California	$110,698	10.10
New York	78,922	7.20
Texas	65,139	5.94
Illinois	64,226	5.86
Pennsylvania	48,558	4.43
Ohio	47,753	4.35
Florida	46,092	4.20
Michigan	43,435	3.96
New Jersey	43,020	3.92
Missouri	28,096	2.56
Georgia	26,013	2.37
Virginia	25,695	2.34
North Carolina	23,760	2.17
Wisconsin	23,720	2.16
Indiana	23,661	2.16
Massachusetts	23,281	2.12
Minnesota	21,972	2.00
Oklahoma	21,030	1.92
South Carolina	20,797	1.90
Kentucky	20,298	1.85
Louisiana	19,717	1.80
Arizona	19,355	1.77
Oregon	19,013	1.73
Washington	17,458	1.59
Maryland	16,812	1.53
Iowa	15,924	1.45
Connecticut	15,117	1.38
Colorado	14,728	1.34
Tennessee	12,917	1.18
Kansas	12,670	1.16
West Virginia	11,095	1.01
Mississippi	10,999	1.00
Alabama	10,290	0.94
Arkansas	9,438	0.86
Nebraska	8,696	0.79
New Mexico	8,287	0.76
Utah	7,457	0.68
South Dakota	5,539	0.51
Maine	5,486	0.50
Hawaii	5,458	0.50
Rhode Island	5,070	0.46
Montana	5,007	0.46
District of Columbia	4,454	0.41
New Hampshire	4,440	0.40
North Dakota	4,408	0.40
Wyoming	4,083	0.37
Nevada	3,885	0.35
Alaska	3,783	0.34
Idaho	3,336	0.30
Delaware	3,240	0.30
Vermont	2,219	0.20

Source: Association of American Publishers. *Industry Statistics*, 1983.

Textbook Manufacturing Standards

In each of the twenty-two adoption states, there is a person in the state education agency called the textbook officer. This person is responsible for overseeing the mechanics of the textbook selection and adoption process, for relaying the bid specifications of each of the states to the publishers, and for executing the purchase orders. This person is the state business agent for textbooks. The twenty-two states once had many different standards for the physical characteristics of books—the quality of the binding, the quality of the paper, the type of print, and the pictures and illustrations. Publishers complained bitterly about the cost of meeting so many different standards. These twenty-two officers have labored long and hard over many years to arrive at a common standard. In recent years, they have developed the Manufacturing Standards and Specifications for Textbooks. The standards are so stringent that the books can withstand an avalanche. Paperback books cannot even be considered in the adoption states.

In recent years, a lot of people have proposed that inexpensive paperback books could be the solution to many problems. Cheaper books could be developed for states and cities with different curricular standards, and all the books would not have to be alike. Students could write in the margin, underline, and keep some of the books at the end of the year. In rapidly changing disciplines like the physical sciences, textbooks could be kept up to date because the school district could afford to replace them quite frequently.

All such suggestions, however, have failed to produce any change in textbooks. No publisher would dare risk sales by putting out a book that would not meet the rigorous standards of the twenty-two adoption states, and no publisher wants to bear the cost of putting out two separate editions—one hardback and one paperback. Furthermore, teachers and administrators generally prefer the ten-pound hardback book to any alternative. Hardback books are easier to store, and the school does not have to cope with ordering new books each year.

Scientific Management of Curriculum

Another recent development, one which has had a more devastating impact on the quality of textbooks, is the concept of scientific management of curriculum. For the last two decades, there have been increasing pressures from the U.S. public for evidence that students in school are really learning what they are intended to learn. The scores on the Scholastic Aptitude Test (SAT) declined for many years, and an evaluation

of the U.S. school system on the basis of those scores would conclude that the schools were losing ground. Certainly that is what the public concluded—largely on the basis of test scores reported in the newspapers. So the decline in test scores, particularly the SAT, has increased the pressure on schools to produce better results. But the more deeply educators looked into declining test scores, the more they became aware of this simple fact: students do better on tests if they study what is going to be tested. So if the schools were to improve their test scores, the curriculum had to match the tests. And because textbooks generally turn out to be the curriculum, educators began to insist on textbooks that covered all curriculum material. This is called "scientific management of curriculum" because it leaves nothing to chance.

States and cities recently have tried to ensure a match between curriculum, textbooks, and tests by making long lists of goals and objectives for each subject and grade level. These lists are strongly influenced by the national tests. The lists—which are called curriculum guides or scope-and-sequence charts—then become the bid specifications for textbooks. Publishers receive these bid specifications from school districts all over the United States. Each political jurisdiction will adopt only the textbooks that match its curriculum.

Over time, the lists have gotten progressively longer and longer. As new social crises have emerged, curriculum leaders have experienced pressures from citizen groups to add more material to the curriculum. As science has expanded its knowledge, scientists and business people have insisted that students learn newly discovered material. As technology has advanced, citizens have come to expect students to learn about new technology—particularly computers.

The curricular demands of school districts differ. Even though each district considers the tests when making up its curriculum, there are many differing interpretations of what students need to know in order to score well on the tests. In addition, there are regional differences. For example, a large state like California can insist that textbooks for junior high school science contain information about the fauna and flora of the State of California. And because California is such an important market, this regional information is included in national editions of junior high science books. Thus children in Maine will be studying about the seal and the ice plant rather than the moose and the potato.

When a group of chemistry professors was assembled in the State of Tennessee to help education officials decide what should be in the first-year chemistry curriculum, one local professor thought that every student ought to know something about molds, and out of goodwill the other professors did not object. Thus the chemistry books used by all students across the United States have a chapter on molds in order that the books can be sold in the State of Tennessee. Even though other more reputable chemists and science educators might say that such a topic has no place in a first-year chemistry book, the publishers will pay little attention as long as Tennessee's bid specifications for chemistry books include that topic.

The idea of a scientifically managed curriculum—the notion that students should be tested on what they have studied—is a good idea in theory. But when it comes to textbook publishing, it has been a disaster. Publishers simply add up the topics on every state and city's curriculum list and pack all the required topics into the confines of a textbook of about 600 pages. As pressures continue to add more topics to the curriculum (and with nobody willing to delete any), the books have become so overstuffed and so little space is devoted to each topic—even to very important ones—that the students often fail to understand the point. Facts have crowded out concepts. Concepts are the glue that hold the facts together, but they have had to be sacrificed to make room for everybody's required tidbits of knowledge.

Researchers who have analyzed current textbooks call this problem "mentioning"—because each idea or fact is barely mentioned. There will be one sentence devoted to the Thirty Years' War and one sentence about the Nixon presidency. The facts have no surrounding context. There are few examples or explanations. Not surprisingly, the researchers have found that students remember very little of what they read in textbooks. So what, in effect, state and school districts are buying are textbooks that read like laundry lists and that students cannot understand.

Readability Formulas and the English Language

Another more recent development that has had a very negative impact on the quality of textbooks concerns the level of reading difficulty and the way in which teachers and adoption committees decide whether a book is too hard or too easy for students at a given grade or age. More than fifty years ago, in a time when it was generally believed that science could be applied to all human problems, educational researchers began to look for an objective way to estimate the reading difficulty of textbooks. Their intention was noble. No children should be given books so easy that they are bored or so difficult that they are frustrated and give up. At that time, the researchers believed that long words and long sentences were the primary cause of reading difficulty. So if the words were short and were familiar to the average child at a given age and if the sentences were simple and did not have too many words,

then children would be able to understand the material. On this premise, formulas were developed to measure reading difficulty. Syllables in words were counted and averaged. Words in sentences were counted and averaged. A numerical score could be derived from these calculations, and books could be assigned grade levels and given to students at the appropriate grade.

This was a harmless enough activity fifty years ago. When educators were selecting books, they might perform a readability calculation, but they would also use common sense and experience. If a book's readability score was a little too high but the teacher knew from experience that the book was so interesting that children would love reading it, then the teacher might not pay much attention to the numerical score. But as time passed, there were more and more hard-to-teach children in U.S. schools. There were waves of immigrants whose children did not know English very well and who therefore had difficulty reading textbooks. And as black children were integrated into white school systems and began to stay in school longer, white teachers began to complain to policymakers that the books were too hard for disadvantaged black children.

Teachers comprise a substantial voting block in any school district election, and school boards are usually looking for ways to please the teachers. When elected policymakers began looking for a way to ensure that textbooks were easy enough for all students to read, they found readability formulas. One state and city after another began to require textbooks to pass a readability check and to yield the proper score before it could be adopted for that jurisdiction. As can be seen from a typical textbook rating sheet, readability is the first hurdle for a textbook to negotiate (see figure 6-2). What had once been an informal evaluation procedure became a legal requirement. Before a book could be considered on its merits, its content, and its capacity to interest students, it first had to pass over the hurdle of a readability formula.

When enough important states and cities had legislated the use of formulas, publishers responded in the only possible way. Instead of using the writings of their authors, they began to edit text according to the rules of readability formulas. Long sentences were chopped in two. Long words, even if they were necessary to the sense of the material, were eliminated, and short words were substituted. Instead of reading the beautiful, traditional stories which have stood the test of time and which represent our heritage and culture, young children were reading contrived, "scientifically" designed stories.

Scholars know much more today about language and reading than they did fifty years ago. It is now very clear that the premises of the readability formula are naive. It is also clear that when publishers use readability formulas to write or edit text, it has the paradoxical effect of making the material harder, not easier, to understand. To give a simple example:

> John didn't buy Mary a birthday present
> because he didn't have any money.

That sentence might exceed the readability score because it is longer than the average number of words permitted for a third-grade book. Thus, the editor would probably change it to read:

> John didn't buy Mary a birthday present.
> He didn't have any money.

The child who reads the second version does not have the benefit of the word "because" to signal cause and effect. He or she has to infer the cause, and being young and inexperienced might not get the connection. Thus, in this example, the *easier* version (according to the formula) is really *harder* to understand.

The use of readability formulas to write and edit text has done violence not only to good sense but also to good English style. And style, according to researchers, is not a trivial matter. It turns out that children prefer reading well-written prose to badly written prose, and they remember more of what they read if it is both beautiful and interesting. Formula prose is choppy, stilted, and extremely monotonous. The cadence goes *Ta-da, Ta-da, Ta-da, period. Ta-da, Ta-da, Ta-da, period.* It would put even a highly motivated adult to sleep, not to mention children who often do not want to be at school at all.

Combine the effects of the "mentioning" problem—too many topics covered too superficially—and the influence of readability formulas on language and one can see why children do not profit much from the expensive and beautiful textbooks produced in the United States.

You cannot judge a book by its cover—as the old saying goes. And yet judging a book by its cover, and many other superficial features that have little to do with good teaching and good reading, is exactly what is happening. The mechanics of the textbook review and selection process focus on these superficial characteristics rather than on the ones that ensure the selection of good thinking and writing. That is the next part of the story—how educators in the United States select textbooks, what they look for, what is important to them, and why they are willing to purchase books which have been demonstrated to be poor by the most respected scholars.

The Textbook Selection and Adoption Process

In the twenty-two adoption states, after statewide committees have selected several books on a particular

Figure 6-2. *Rating Form for Textbook or Textbooks Series*

Name of Textbook or Series _____

Author(s) _____

Publisher _____ Copyright date(s) _____

Price of book(s) _____ Cost of supplementary materials _____

_____

A. Readability

1. Approximate reading level(s) _____
2. Formula used to determine level(s) _____
3. Reading level is realistic for students using the book(s) _____

	Yes	No	N/A
B. Authority			
1 Author is well-qualified and reliable in the field	☐	☐	☐
2 Publisher has reputation for high-quality publications	☐	☐	☐
C. Vocabulary			
1. Key vocabulary is printed in bold or italicized print for easy detection	☐	☐	☐
2. Key vocabulary is listed before or following the chapter	☐	☐	☐
3. Words are defined either within the text or in the glossary.	☐	☐	☐
4. Definitions are readable and easily understood	☐	☐	☐
5. Students could be expected to learn vocabulary with a reasonable amount of preteaching by the teacher	☐	☐	☐
D. Concepts			
1. Main concepts presented support instructional objectives of the school district	☐	☐	☐
2 Major concepts are presented logically and skills are sequenced.	☐	☐	☐
3. Major concepts are sequenced at a pace appropriate for most students	☐	☐	☐
4. Format of the text separates main concepts with headings or in sections	☐	☐	☐
5. Text provides sufficient detail to make concepts and ideas meaningful.	☐	☐	☐
6. Concepts are appropriate—challenging but not frustrating—for students using the text.	☐	☐	☐
7 Text is not so limited in scope as to be inadequate.	☐	☐	☐
8 Text supports instructional management concept of the school	☐	☐	☐
9. Study guide questions accompany text	☐	☐	☐
10. Material and concepts can be related to student needs	☐	☐	☐
E. Presentation of material			
1. The book is well-organized and deals with material: ☐ chronologically ☐ by units ☐ by category ☐ by topic ☐ sequentially			
2. Bibliography of supplementary material is presented at the end of chapters or at the end of the book	☐	☐	☐
3. Material can be related to other content areas and supports the total instructional program.	☐	☐	☐
F. Ancillary material			
1. Exercises relate to basic concepts and are not "busywork"	☐	☐	☐
2. Directions are clear and easy to follow.	☐	☐	☐
3. Pre- and poststudy questions stimulate thinking and are not all at literal level.	☐	☐	☐
4. Practice exercises follow the sequence of skills.	☐	☐	☐
5 Enrichment materials are available for superior and gifted students.	☐	☐	☐
6 Appropriate materials are provided for average and below-average students.	☐	☐	☐
7. Most students can do the practice materials with a minimum of teacher help	☐	☐	☐

Figure 6·2 *(Continued)*

	Yes	No	N/A
G. Graphics			
1. Graphic materials are sufficient in number to help students understand materials	☐	☐	☐
2 Illustrations, charts, maps, and graphs are clear and meaningful.	☐	☐	☐
3 Photographs and pictures help clarify the text.	☐	☐	☐
4 Illustrations help motivate student reading and stimulate class discussion	☐	☐	☐
5 Illustrations help students in thinking and problem-solving	☐	☐	☐
H. Freedom from bias			
1 Text presents minorities (races, religious groups, nationalities, sexes) without stereotype or bias.	☐	☐	☐
2. Materials portray racial, religious, and ethnic groups in a way that will build understanding, appreciation, and acceptance	☐	☐	☐
I. Parts of text			
1. Table of contents is complete, easy to use	☐	☐	☐
2. Glossary definitions and pronunciation key are simple and understandable.	☐	☐	☐
3. Index is easy to use	☐	☐	☐
J. Teacher's guidebook			
1 Teacher's guidebook is available.	☐	☐	☐
2 Teacher's guidebook provides needed assistance	☐	☐	☐
3 Answer key is available.	☐	☐	☐
4. Goals and objectives of text are clearly stated in guidebook	☐	☐	☐
5. Alternative materials are suggested for use with students.	☐	☐	☐
K. Format			
1. Binding is durable and soil-resistant	☐	☐	☐
2 Paper is of good quality	☐	☐	☐
3. Print is appropriate size.	☐	☐	☐
4. Print is clear and readable.	☐	☐	☐
L. Cost			
1 Cost is realistic for school district	☐	☐	☐
2 Cost of supplementary materials is reasonable	☐	☐	☐

topic for inclusion in the state-approved adoption list, the local school districts choose from among the approved books. Many districts will purchase only one book for each grade or subject, and so a similar process of screening is repeated by local textbook adoption committees in each school district.

Although they do not have as many alternatives to choose from, the local adoption committees nevertheless face a daunting task. Not only must they choose from among the textbooks; they must also make decisions about all the extras that come with a textbook. In recent years, publishers do not just sell the student text; they sell a teachers' manual, workbooks, maps, slides, sample letters home to the parents, tests, and all kinds of other supplementary material. The publishers no longer provide textbooks but textbook programs. So there is a bewildering array of materials to examine. Just choosing an elementary reading series for kindergarten through the sixth grade could be a task that would take weeks of concentrated analysis if the job were to be done conscientiously.

But if teachers work overtime, they expect to be paid, and few school districts have the money to pay for much overtime. What happens, then, is that a committee of teachers is assembled after a full day of teaching. They sit down at a table with an enormous pile of books and other materials. They are given a checklist with hundreds of items. The checklist, intended to help them remember all the points they should consider, has usually been developed by some other committee of teachers and administrators, sometimes with the help of parents or representatives of political pressure groups. Everyone

wants the points he or she considers most important on the checklist.

Just as the lists of curricular objectives are really too long for any student to accomplish reasonably in a school year, so the lists of criteria for textbook selection are really too long for any adoption committee to accomplish in an afternoon, which is usually the time allotted to this process. Even worse, the checklists, like the readability formula, concentrate on things that can be counted or observed. A book might get ten points on a rating sheet just because it has a table of contents, even if the table of contents is inappropriate or misleading. For the most part, the checklists fail to register any qualitative differences. And even if it were possible to record differences in quality on the typical rating sheet, there would not be the time to do a serious, qualitative analysis of four or five different textbook programs.

What happens, then, is that the teachers on the local adoption committees make their decisions on the basis of factors that have little to do with textbook quality. They tend to put a lot of faith in pictures and illustrations. A typical question on a rating sheet will be, "Are the pictures and illustrations attractive?" This is the kind of question that can be addressed between three and five in the afternoon. The teachers literally flip through the pages of the book, looking at the pictures. Publishers know how the system works, and so they put all the most attractive pictures on the right-hand side of the book so that it will pass what they call the flip test.

Another standard question on rating sheets is, "Is the binding sturdy?" Now there is no way in the world that school teachers can tell by thumping the cover whether the binding will last for six months or six years. That is a technical and scientific question, and they do not have the knowledge to answer it. Yet teachers enjoy answering the question because it is one that can be answered quickly. In fact, the question (and answer) is irrelevant because the twenty-two adoption states have established technical standards for book bindings, and all publishers abide by those standards.

In figure 6-3 (a typical checklist), the first item—"Fits our curriculum needs"—is really quite important. To respond to that item thoughtfully, the curriculum guide must be matched point by point against the material in the textbooks. One report was that it took five hours of serious work just to go through one volume of a textbook series.

Clearly, adoption committees do not have that kind of time when they are confronted with a stack of textbooks. So what do they really do? They ask the publisher to provide a document called a correlational analysis. In other words, the publisher is expected to do the labor involved in proving that its book matches the curriculum specifications of the cities of Detroit, Sioux City, and Houston and the whole state of North Carolina. Yet the bid specifications from those different places are almost certainly quite different. Detroit might have a thousand objectives for elementary mathematics and North Carolina might also have a thousand objectives for elementary mathematics, but they will not be the same thousand.

So what does the publisher do? It hires people to sit down with the district's bid specifications and the textbook, and those people look for the merest shred of evidence that the publisher's book "covers" all the points required by the state or city. These documents sometimes involve hundreds of pages, and according to publishers nobody in the school district actually reads them or checks to see whether they are accurate. Yet publishers freely admit that the correlational analysis is a matter of smoke and mirrors. A single word or sentence in the textbook, the teachers' guide, or the workbook will justify a citation that the topic has been covered. One publishing executive told me that he regarded correlational analysis as "merely an exercise to be performed." Some central requirements of the curriculum have been met, and the document provides symbolic proof.

Further down the list of items under section I, figure 6-3, is item E—"suitability to maturity level and reading level"—calling the readability formula into play. Adoption committees will sometimes send their members home with the books to calculate the "readability level" according to the formula. In general, teachers are no longer willing to exercise their personal judgment on this matter because they have been convinced that something "objective" is better than their subjective opinion. Publishers know how the world works, and they will use the readability formula for writing texts as long as adoption committees use it to judge textbooks. If a single passage or page should fail to obtain the proper score, an adoption might be lost.

Item L in figure 6-3—"Up to date"—is typical. Judging whether the book is really up to date requires a great deal of specialized subject-matter knowledge which teachers typically do not have. They are after all teachers, not scholars. They do not have time to keep up with changes in their own subject disciplines. So the quick and easy way to judge up-to-dateness is to check the publication date. There was a time many years ago when a current publication date meant that the publisher had produced a new, revised edition with up-to-date content. But for some time publishers have been allowed by law to change only a few pages in an entire book and still qualify for a current publication date. So a current date no longer means that the knowledge has been updated. It may mean that the publisher has changed

Figure 6-3. *Textbook Rating Checklist*

Name of book/series _____ Author(s) _____

Publisher _____ Date of publication _____ Price _____

Name of person making evaluation _____ Total of points awarded _____

I. *Organization and content*
- A. Fits our curriculum needs
- B. Adapted to specific needs of students
- C Quality of content
- D. Adequate coverage of material
- E. Suitability to maturity level and reading level
- F. Vocabulary level
- G. Not enough or too much stress on detail
- H. Teaching of values
- I. Interest level
- J Correct standards and ideals in use of English
- K. Method of presentation
- L. Up to date
- M. Use of sequential development
- N. Inclusion of chapter summaries
- O. Adaptable to time limit of course

Maximum credit: 60 points Examiner's credit _____

II. *Physical features*
- A. Attractiveness
- B. Illustrations
- C. Dimensions of book
- D. Durability of book
- E Size and style of type
- F. Arrangement of page

Maximum credit: 10 points Examiner's credit _____

III *Authors*
- A. Experience with this age group
- B Education
- C Training

Maximum credit: 10 points Examiner's credit _____

IV *Teaching aids*
- A. Suitable aids to learning (maps, pictures, charts)
- B. Suitable helps and aids to instruction
- C Suitable end-of-chapter activities
- D. Suitable testing materials
- E. Index (quality and usefulness)
- F. Table of contents
- G References and bibliography
- H. Glossary
- I. Appendix
- J Teacher's edition
  - 1 Background information
  - 2 List of activities to lead student beyond textbook
  - 3. Concepts and generalizations of and clearly stated
  - 4 Suggestions for methods of motivation

Maximum credit. 20 points Examiner's credit _____

V *Resources already available in district resource center*

Comments: Describe special features of the book you liked and/or objectionable features which might prohibit adoption of of the book

_____

_____

_____

_____

_____

_____

some pictures or titles—pictures and titles that might please adoption committees. Thus this method of assuring up-to-dateness is not up to date and has not been so for many years.

Another anachronism that still has a firm place in the adoption process can be seen in the third category—"Authors." Adoption committees are asked to judge the credentials of the authors, and so publishers print those credentials at the beginning of the book. The truth is, though, that *those* authors are not really *the* authors. They are selected for their credentials so that the book will have a better chance of selling, but they are not in most cases the people who actually wrote the book. Because Texas and California are so powerful, publishers typically select an education professor from the University of Texas, the University of California, or both to be the titular authors. And because both of those states have large Hispanic populations, publishers like to select a professor with a Spanish last name. There are also lists of "consultants" who have supposedly helped the authors by reviewing the books, and those must now include women, rank and file teachers, and educators with national recognition.

What really happens, though, is that the authors listed on the title page do not very often really write the book. They are not really writers, and they are busy. Often they fail to deliver a manuscript, or when they do it is unusable. Young people hired by the publishers do the writing, or else the publisher resorts to a production shop. Often, the production shop receives the assignment at the last minute. A publisher might find out a few months before the publication date that the named

authors cannot produce the material, and the production shop will be expected to come up with text in a very short time.

Not only are the real writers limited by time, but they also must follow outlines provided by the publishers. The outlines consist of the combined topics that all jurisdictions insist upon and the social issues that must be included or avoided—usually avoided. These real writers have very little freedom to write a coherent book. They are tied in knots by all the requirements and prohibitions, and they are constrained in their use of language by readability-formula requirements. Thus although innocent teachers across the land are reading information about authors of textbooks and making judgments based on that information, the publishers are creating illusions that will enhance sales.

Pressure Groups and Bias

"Freedom from Bias" (item H in figure 6-2) raises another issue. Because of the struggle to overcome prejudice against minority groups—particularly black people and more recently women—textbooks have become the target of those groups which want society to become more fair and those which do not.

There has been progress. Only ten years ago, some U.S. textbooks portrayed blacks, women, or ethnic minorities in stereotypical ways. For the most part, these stereotypes have been eliminated because publishers understood that they risked loss of sales. But the requirements of minority-group representatives have gone far beyond the removal of negative portrayals. Fairness is the main consideration, and often the method of assuring fairness is quite mechanical. Thus each picture must have equal numbers of blacks and whites or males and females. Three seated females are not considered equal to one active male. Minority-group members—for example, female Hispanics—must not be shown always as peasants or mothers but also as professionals. The thought behind such a requirement is that students who are female Hispanics need role models of women of their own kind who have achieved status in this society.

Although every reasonable American knows that textbooks once treated minorities and women unfairly and nearly everyone is glad that textbooks no longer present such negative images, there has been an enormous price to pay as a result of the mechanical way in which fairness has been interpreted. California, for example, says that elderly people cannot be shown in a negative way. And yet one of the great classic writers of the English language, Charles Dickens, portrayed a number of old people as bad tempered and selfish. One of the great classic stories—and one that is entirely appropriate for children—is Dickens's *A Christmas Carol*. No prudent publisher would include that story in an anthology of children's stories, however, because some group of senior citizens in California could appeal to the adoption committee to reject the book. In Shakespeare's *Merchant of Venice* there is the miserly Jewish merchant, Shylock, and Jewish pressure groups in California and elsewhere have tried to get that play eliminated from the public school curriculum.

In literary classics from the last century, women are often portrayed as helpless, uneducated people whose only function is to serve their husbands and raise the children. Powerful groups of feminists have often tried to get textbook adoption committees to reject literary selections, however great, because those selections were written at a time when women were not considered the equal of men.

Publishers have been caught in the cross fire between black pressure groups with different viewpoints on how blacks should be portrayed in textbooks. On one side are those black Americans who object to lengthy discussions of slavery because they believe that such material contributes to a negative image of blacks. On the other are those who believe that white Americans need to be confronted with the cruelties that slavery imposed on black Americans.

Curiously, conservative Protestants in Texas do not want textbooks to mention death because they think it is too depressing for young children to know about. The power of these groups was so great about ten years ago that publishers dared not present any stories that involved death. The religious fundamentalists also do not want textbooks to contain stories that show conflict between parents and children, and yet such conflicts are the stuff of great fiction. For nearly a decade, Texas forced publishers to eliminate the theory of evolution from biology books because the fundamentalists believe it undermines Christian belief.

Publishers have tried to avoid such controversies and prevent their books from being rejected by school districts responding to pressure groups by contriving happy, bland, empty stories that have no conflict, no sadness, and no imperfect people. But it is clear that children do not like to read such stories. Stories that lack conflict, that do not present life as it really is, are boring. Even worse, the great literary works of the past have had to be set aside, and history and biology books have had to be severely edited.

Although the bias item appears to be a simple and reasonable part of the checklist, the way in which it is interpreted has been a mixed blessing. Although children are no longer exposed to biased textbooks, they are also no longer exposed to the common culture of the English-speaking world. And fear of militant, con-

servative Christian groups has blocked children from important scientific knowledge as well.

There are now counter-pressures from cultural critics and reading experts to include more natural literature, true history, and good science in children's books. Even though publishers have begun to respond to those counter-pressures, they are still afraid of the anger of special-interest groups and still aware that most adoption committees continue to judge books by political standards. As long as powerful adoption committees in major states continue to count races and genders and to eliminate good material because of sentences or pictures that offend them, publishers will continue to produce books that avoid the deepest issues of the human condition.

The basic cultural issue at stake is the historic struggle between those who want children to know about life as it is and those who want them to know about life as they wish it were. The current conflict is more exaggerated because the media seek out controversial issues and publicize the angry, crusading, colorful leaders of pressure groups.

Other Choices

In item F of figure 6-2, "Ancillary Material," the reviewers are asked to consider some aspects of quality. This calls for a judgment about whether the workbook exercises are just busywork or related to basic concepts the children should be learning. It asks whether the directions are clear and easy to follow.

Those particular questions are there because of the deterioration in the quality of workbooks. A recent analysis of workbooks showed that most workbooks were merely busywork. Furthermore, her examples, drawn from the leading publishers' workbooks, showed that even a skillful adult would have trouble understanding the directions. The publishers, to save money, had been hiring other companies to compile the workbooks. Often the people who compiled the workbooks neither read the student textbook nor collaborated with the author. They wrote workbooks in complete isolation and under severe time pressures, and often they produced essentially the same workbook for several major publishers. Because the publishers have been so embarrassed by the scholarly criticism of their workbooks, they have begun to take them more seriously, and the workbooks are beginning to improve.

Few checklists take account of important new knowledge about effective textbooks. They seldom ask the reviewers to consider seriously either the quality of writing or the depth of treatment required for student understanding. The emphasis in most checklists on readability actually reinforces bad writing, and the emphasis on curriculum reinforces the problem of "mentioning" or too many topics.

In practice, because the task of textbook selection is so overwhelming, people usually select books on the basis of what they do not want rather than what they do want. Teachers skim through the pages to find evidence of bias or inaccuracy or lack of coverage of some point, and that is the basis of elimination.

Once in a while, a conscientious publisher takes a big risk. The publisher will put out a textbook that meets a high standard and that reflects modern knowledge about sound textbooks. But in nearly all cases, these risky ventures have been very costly. When those high-quality books have been put through the current selection process, their virtues have not even been noticed. Sometimes principled publishers have been forced out of the business. Few are willing to take such risks anymore. Until they believe that quality is a serious issue with those who purchase books, publishers will continue to place emphasis on coverage of topics, even at the expense of good writing; on pretty pictures, even if the pictures bear little relation to what is written in the book; and on the sensitivities of political groups, even if knowledge is falsified.

In summary, the textbook enterprise in the United States has become a comedy of errors. The economic lure of the large adoption states has distorted the free-enterprise market, and in the process the corrective effects of free competition have been stifled. Further, the laws designed to solve the problems of a bygone era in U.S. history have remained and have had an unintended and negative impact on the current textbook market. State legislators—generally less concerned about education than other public issues—have passed laws which have had the opposite effect of those intended. For political gain, they have yielded to pressures from special-interest groups, and in the process they have made laws which have helped in some ways but done harm in others.

Publishers, in their pursuit of profit, have sacrificed academic integrity and literary quality because buyers are concerned about other matters. The salespeople who represent publishing houses have wined and dined teacher committees, bribed adoption committees with free textbooks or workbooks, flattered influential teachers by putting them in charge of pilot studies of new textbooks, and generally promised everybody to make teaching easier and easier. Teachers are told that the book will produce amazing results on tests, that lesson plans are included in the teacher guide, that the tests are self-scoring, and that the workbooks will help them manage the class by cutting down on discipline problems.

Teachers are becoming more and more dependent on textbook programs. The ready-made lesson plans and

tests mean that they do not have to spend their evenings preparing for the next day at school. The teacher guide tells them exactly what to say and even provides alternative plans for students who do not understand or those who understand too quickly and need something else to do. Although some of these features may help beginning teachers or correct the weaknesses of poor ones, they threaten to deprive all teachers of their pride, their creativity, and their autonomy as professionals.

Positive Trends

In the last several years, textbook quality has suddenly become a political issue. The press has been putting the spotlight on research findings related to the quality of writing, the depth of treatment, and the distortions brought about by the political process. A few states have begun to train their adoption committee members and to allocate more time for the review of books. Some states are beginning to rewrite their adoption codes. California recently refused to purchase science textbooks because none of them paid enough attention to evolution, human reproduction, or ethical issues related to the environment. California has also demanded that elementary reading books contain more high-quality literature.

It is too early to tell whether any of these changes will spread to other states and school districts or whether they will be lasting. The forces keeping the present system in place are very powerful. Of more importance, the enterprise has become so absurdly complicated that few people fully understand it When legislatures treat the symptoms without fully diagnosing the disease, they often make things worse, not better. Florida, for example, recently passed a law that all textbooks adopted there must be on grade level. The legislator who introduced the bill believed he was going to reverse the trend toward "baby-talk" in textbooks and ensure that students got books that were challenging instead of boring. He failed to understand that his law would have the opposite effect.

Florida also recently passed a law that textbooks must match all the items in Florida's curriculum. Unfortunately, Florida's curriculum is highly specific, with thousands of bits of knowledge and skill included in every subject area. Publishers will now have to stuff more and more tidbits and gimmicks into already overcrowded books in order to attract Florida sales. Thus through failure to understand cause and effect and unwillingness to understand how selection committees work or why publishers respond to laws in an exaggerated fashion, the Florida legislators have made serious problems even worse.

Nearly all efforts to improve textbooks have been well intentioned. But the curious effects of this fragmented system of school governance as it comes up against the national free-enterprise production system has caused good intentions to become bad textbooks.

The developing countries are concerned with a much more basic set of problems: how to get enough textbooks produced; how to get the textbooks to the students; how to protect the books from moisture, mold, and insects; and how to find the money to buy them. But only 130 years ago, the United States faced many of the same problems. In that short span of time, Americans have managed to create a system that is too concerned with trivial matters and not enough concerned with culture, scholarship, or student understanding.

Every country has its unique problems, and every culture and language requires its own special consideration. But I would offer the following advice to any nation on what not to do as it moves forward in the development of textbooks:

- Do not try to regulate authors and publishers too closely. Good books are written in an atmosphere of relative freedom.
- Do not use checklists to tell publishers what to write or teachers what to buy. Checklists and other bureaucratic rituals have a way of crowding out thought.
- Do not allow modern ideas to deprive children of the myths, stories, and historical events that are part of their cultural heritage. Maybe it is only Americans who would do such a silly thing, but it is worth noting that the education of any people suffers when it tries to cut its ties with the past, even if the past is less than beautiful.
- Do not take all the decisions away from the teachers. Even if those teachers are not as well trained as they should be, they will not become stronger if they are not trusted to make important decisions about the tools of their profession.
- In the total costs of schooling, textbooks form a relatively small item. Too much attention to cost and not enough attention to effectiveness is shortsighted. The difference in the price of a mediocre book and a good book is small and not worth the saving. Old books are both better than no books and better than bad new books.
- The student should be seen as the ultimate user of the book. If the book appeals to politicians, professors, administrators, or even teachers but students find it too simple, too advanced, boring, frustrating, or unclear, then the book is not a good book, regardless of what anybody else thinks.
- Schools should provide free textbooks to all students. When students have to buy their own books,

the poor are penalized and the goals of a public education system are defeated.

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Copyright in the Developing World

Philip G. Altbach

The distribution of knowledge requires a complex set of relations among publishers, journals, multinational corporations, governments, educational and academic institutions, and individual scholars. A controversial and important element in those relations is copyright. It affects every aspect of the knowledge business, from the rewards available to an individual author and the control exercised over intellectual works to international relations among large corporations and nations concerning the distribution of knowledge.

International copyright—the control over the international distribution of knowledge and the rules that govern the flow of printed materials across borders—is a key concern because developing nations use knowledge from abroad and are generally dependent on foreign books. Copyright necessarily has an impact on how knowledge is distributed, on who controls it, and on the development of the publishing industry. I am concerned here largely with books, the most traditional means of distributing knowledge, and not so much with the new nonprint modes of distribution and communication, although copyright has significant implications for them as well. The impact of copyright on knowledge in the developing world is my main concern, along with the related theme of the relation of textbooks to copyright in both national and international frameworks. To discuss these themes, it is necessary to consider the context of copyright in the modern world.

What follows is not a discussion of the legal aspects of copyright, although the bulk of the literature on copyright is related to copyright law and its applications. Copyright law, a recognized specialty within legal studies, has become increasingly important as a result of the reinterpretations necessary to deal with the complex issues raised by the new technologies such as reprography (photocopying), advances in computer-based composition, and new techniques of printing. Although legal issues will be mentioned, my concern is with the political, economic, and intellectual implications of copyright in the context of the distribution of knowledge. The issues raised here have deep philosophical importance and go to the very heart of the control of knowledge and creativity, to the right of the individual over his or her work, and of course to the sometimes conflicting needs of society to have access to knowledge whether for school textbooks or for advanced scientific research. There are no easy answers. What seems philosophically clear in one context may raise problems in another. Definitions are also a problem. As photocopying has grown into a major industry, the concept of "fair use" has become a matter of considerable controversy in the industrial nations (Weinberg 1975; see also Leavens 1981).

The Concept of Copyright

There are at least three basic approaches to copyright. The first stresses the moral right of the individual to his or her creative property and to his or her essential control over that property, be it a work of art, an invention, or a book. This approach is reflected in most of the European copyright laws and in the Berne Convention, the oldest and largest of the two major international copyright arrangements. Copyright might be summarized as either a natural right or an inherent moral right of the individual (Ploman and Hamilton 1980: chap. 1). The second approach, nicely summarized in the U.S. Constitution, holds that copyright is intended to stimulate creativity and invention and that it is a privilege granted to individuals for the benefit of society (Ringer 1974: 19–28). The U.S. approach can be summarized as a commercial view of copyright and, in general, as a way of encouraging intellectual creativity. The third approach is the societal theory exemplified by the Soviet copyright system. In this system, the society has certain basic rights over creative work, and the copyright laws reflect a compromise between

personal rights and the rights of the collective enterprise. The concept of copyright as property, which is the key to the market economies and is basic in both the U.S. and European approaches to copyright, is absent from the societal theory (Ploman and Hamilton 1980: 123; for a broader perspective, see Walker 1978).

Not everyone, of course, agrees that copyright is a good thing. One of the classic anticopyright statements is Thomas Macaulay's that copyright is "a tax on readers for the purpose of giving a bounty to writers."[1] Philosophical arguments have raged over the centuries concerning the nature of copyright, the justification for it, and the appropriate limits when balancing the interests of the individual with those of society. The controversy has grown more complex in the past few decades as copyright has been applied to nonbook products such as computer programs. The argument concerning regulations governing photocopies is a good example of the complexity of copyright in recent years. The arguments revolve around the rights of individuals and publishing firms, on the one hand, and those of the public, on the other, to knowledge and to the dissemination of photocopied material.

Copyright stems from particular historical and socioeconomic circumstances. It emerged and gained strength in Europe as printing and distribution grew more sophisticated, industry developed, and a mass market for cultural goods assumed importance. As literacy became widespread, newspapers, magazines, and books became artifacts of contemporary culture. The mode of economic organization was capitalist, and artistic creation was increasingly linked with an emerging industrial revolution and the attitudes and institutions that grew up alongside this key transformation of the nineteenth century. The role of the artist and writer that copyright protects is based on a capitalist relation between culture and profit. The idea of the artist and writer as an individual creator who profits from his or her work and who is engaged in a competitive enterprise with other individual creators is the key to the European and U.S. ideologies of copyright. This concept of copyright functions in a market system where intellectual goods can be bought and sold and are assigned a monetary value. Edward Ploman argues how surprising it is that copyright has gained such wide acceptance in societies with quite different economic orientations and value structures (Ploman 1985: 27; similar themes are discussed in Mattelart 1983 and in Mattelart and Siegelaub 1979). Stripped of its idealistic claims, copyright is a way of bringing the world of intellectual creativity into the world of contemporary commerce.

Historically, most developing nations inherited the European approach to copyright, because most of the copyright laws were patterned on the colonial regulations that were in place at the time of independence. Given other development priorities, developing nations have moved slowly to make their copyright laws indigenous. Furthermore, there has been a good deal of controversy concerning the appropriate orientation to copyright. Current thinking in developing countries on copyright reflects elements of all three of the basic approaches discussed above and may in the long run contribute to a synthesis of theoretical perspectives on copyright and the distribution of knowledge.

The emergence of the developing nations since World War II has added a dimension to the concept of copyright. Discussions in developing countries of the creation, dissemination, and use of information in the global village have stimulated debates in meetings of Unesco and other organizations on the "New World Information Order" and on issues of equity and control over the means of dissemination (Olian 1974:81–112; see also McFarland 1982:100 and Bortnick 1981). But virtually everyone who writes about copyright accepts the basic premises on which the concept is based; the debates are predicated on a common understanding and acceptance.

Textbooks have not been considered as a separate issue in copyright debates. It is generally assumed that textbooks can be treated as other publications and be subject to the same copyright regulations as other books. In the international context, however, textbooks have been recognized as belonging to a special category that should not be limited solely to commercial considerations and should be permitted to cross borders without the same restrictions as other books. Textbooks are therefore considered to be partially exempt from rigid copyright protection because of their importance to education in developing countries.

Historical Perspectives

Although copyright has a long history, it did not emerge as an important concept until nations began to build up their own cultural infrastructures and felt the need to systematize and protect authors, publishers, musicians, and the panoply of new knowledge industries. The United States, as will be illustrated, was one of the world's first major pirates until it securely developed its own cultural industry in the late nineteenth century. The needs, concerns, and indeed the issues which are now of concern to the developing countries have become only very recently part of the discussion of copyright and the distribution of knowledge. As Edward Ploman succinctly put it (Ploman and Hamilton 1980: 8):

> Copyright evolved in response to specific changes. Its origin is Western and its parentage multiple: the invention of the printing press and the advent of the Industrial Revolution, the philosophy of the market-

place and that of natural rights, the rise of bourgeois society and the spread of literacy, new social attitudes toward art and the artist. The resulting notion of intellectual property is a European invention but is now used in diverse economic and social systems to structure the flow of information and cultural products.

Historically, copyright developed in England in the sixteenth century—not as a means of protecting authors and intellectuals, but as a means of maintaining order and discipline in the emerging book trade (Patterson 1978: 222; see also Whale 1970). As England became a key center for intellectual products and for publishing (not only for its colonies but also for the United States), the evolution of copyright there followed a rather twisted path and was informed by the concerns of the marketplace, of book publishers, and eventually of the British book trade to protect its export interests (Parsons 1974). Copyright in England was also linked to the laws of press control and censorship, and it functioned for more than 150 years as a means of maintaining a monopoly in the book trade. Thus in England the rights of authors and artists had relatively little to do with the early development of copyright; such concerns emerged later and were in some respects stimulated by thinking in France and elsewhere in Europe. Despite this rather murky beginning, the world's first copyright law (the Statute of Anne, passed in 1709) did recognize the right of the author to his or her work as well as regulate the printing trade.

Early copyright discussions were remarkably similar to those heard today. There was a concern about how to deal with revolutionary technological developments—in this case, the printing press and its immense impact on culture and commerce. How to control the number of copies and keep track of distribution were also topics of considerable concern in the eighteenth and nineteenth centuries. The rights of authors, on the one hand, and the control of knowledge, including censorship, on the other, entered into the equation. Finally, the rights of others involved in the business of culture, including both booksellers and publishers, were very much part of the debates. Each of these concerns has its analogy in current discussions of copyright.

Nations have always used copyright for their own purposes—a fact that is easy to ignore in the idealistic rhetoric that has characterized copyright discussions since World War II. The fact is that the nations which basically control the world system of knowledge—the Western industrial powers—have convinced the rest of the world that their version of contemporary copyright is the correct and universal standard. This was not always the case. Nations historically have been most concerned with first developing their own culture and publishing industries and only later observing the niceties of copyright. Both of the world's current superpowers, the United States and the Soviet Union, were quite late in joining the international copyright system. Imperial Russia did not strictly adhere to copyright rules, and the revolutionary Soviet regime followed that tradition, joining the international copyright community only in 1974 (see Cramer 1965; Lottman 1975; Schwartz 1975). The U.S. attitude toward copyright is in many ways a classic example of how copyright has been both flouted—and utilized—in the process of developing an independent literature, culture, and publishing infrastructure.

The United States in the nineteenth century was a developing nation and looked to Europe for cultural and intellectual cues.[2] The first U.S. copyright act, passed in 1790, specifically permitted pirating of foreign published works (Patterson 1978: 197). The general thrust of the 1790 act was that copyright was a privilege and not a right and therefore could be significantly restricted. The U.S. printing and publishing industries grew up with the practice of freely printing foreign works and selling them in the United States without obtaining permission from the overseas authors and without paying any royalties. Some of the best-known U.S. publishers prospered by obtaining popular fictional works in England and quickly printing copies in the United States. Charles Dickens, among many other British authors, frequently complained about his economic losses due to U.S. pirating. In many ways, the U.S. printing and publishing industries benefited significantly from a system that depended on freedom to publish, without payment, the unprotected works of foreign authors (Tebel 1975). It is also significant that even when the United States began to offer copyright protection to foreign authors and to participate in international copyright activities, it retained in its copyright law a manufacturing clause that demanded books by U.S. authors be printed in the United States in order to enjoy U.S. copyright protection. This clause was the subject of considerable controversy in the debate concerning the 1968 copyright revision; in 1986 it was allowed by the U.S. Congress to expire, thus removing one of the last special provisions in the U.S. copyright law (Ringer 1968: 1054).

The first significant U.S. participation in international copyright was in 1891. But the United States did not formally participate in any of the established international copyright conventions until the Universal Copyright Convention (UCC) was established in 1952—and the UCC was, in fact, set up largely to bring the United States and most Latin American countries which followed the U.S. lead into the fold of international treaties. In some respects, the unwillingness of the United States to offer protection to foreign authors until quite

recently contributed to the buildup of independent U.S. publishing and printing industries (Olian 1974: 93). In other respects, it retarded the growth of U.S. authorship and made it difficult for Americans to earn a living by writing, because publishers could easily publish foreign (mostly British) authors without paying royalties. It is quite clear that the United States used copyright for its own purposes and that the Americans in the nineteenth century were the worst pirates in the world.

The International Copyright System

International copyright protection is a recent development, and it too resulted from the growth of technologies, from more international use of such languages as English, French, German, and Spanish, and from the emergence of international centers of book publishing and scholarship (Ringer 1968: 1051). By the mid-nineteenth century, the web of copyright treaties in Europe was so confusing that an international conference was called, resulting in the International Convention for the Protection of Literary and Artistic Works, popularly known as the Berne Convention, in 1886 (Unesco 1981; see also Ploman and Hamilton 1980). It is the oldest copyright treaty in the world and has gone through several revisions, the most recent of which directly concerned developing nations and aroused a good deal of controversy. As of 1979, there were seventy-one states in the Berne Convention, with the notable exceptions of the United States, China, and the Soviet Union (de Freitas 1983:5). The Berne Convention is administered by the World Intellectual Property Organization (WIPO), which helps to solve disputes, provides interpretations, and keeps records and statistics. It reflects the Western European concept of copyright and was developed to protect the interests of the European nations as publishing and printing became major industries because of the industrial revolution, mass literacy, and public education. The national copyright laws of the European powers were altered to place them into conformity with the requirements of the Berne Convention.

The basic commitment of the Berne Convention is to protect the rights of individual authors, and its philosophical orientation is toward the "natural-right" approach to copyright. The treaty set a minimum standard of copyright protection that was then binding on all the signatories. Countries can provide more protection than stipulated by Berne, but they cannot offer less. In 1948 a revision of the convention gave it even stronger precedence over national copyright regulations. The Berne Convention requires its participants to conform in considerable detail to its rules, and it has been generally successful in obtaining this conformity. Under the Berne Convention a work (written, artistic, or other) has protection from its date of creation whether or not it is formally registered with a national copyright office. This protection is offered only to nationals of the signatories of the convention. The length of copyright protection, an issue of considerable controversy, has been gradually extended so that it is now the author's lifetime plus fifty years.

The second major international copyright treaty was established in 1952 under the auspices of Unesco, which currently administers it.[3] The Universal Copyright Convention was developed largely to bring the United States and a number of Latin American nations into the international copyright system. It was, simply stated, a compromise between the Berne Convention and the U.S. view on copyright (Ploman and Hamilton 1980: 58). U.S. copyright law traditionally has offered significantly less protection to copyright holders than European rules, and the UCC similarly is less inclusive than the Berne Convention, although both treaties provide basic rights and many countries are members of both the Berne Convention and the UCC. The UCC sees copyright in a larger context that includes such issues as the development of literature and the dissemination of knowledge. As a result, factors other than simple protection of the rights of authors enter into the equation. Unlike the Berne Convention, which stipulates that all original works have basic copyright protection regardless of whether they are formally registered, the UCC insists that nations have registration procedures and spells them out. The UCC also offers a shorter term of copyright protection: the life of the author plus twenty-five years.

Current Issues and Compulsory Licensing

The copyright agencies, international organizations like Unesco, and the major publishing nations have pressed for the widest possible adherence to the copyright system. They have also been quite successful in convincing many developing nations to draft or strengthen their own national copyright legislation and to adhere to one or more of the international treaties. There has also been pressure from developing countries on the copyright agencies to make it easier for them to obtain rights to translate or reprint books from abroad, and they have had some success (Krishnamurthi 1968). In addition, there is constant litigation and debate concerning the scope and meaning of copyright, the definition of "fair use" in the age of the photocopying revolution, and the appropriate limits to copyright protection in the face of pressures for equity in the international system. The copyright agencies have sponsored a number of full-scale conferences on copyright revision and have in fact made some substantive changes.

Some of the most heated debates on international copyright after World War II were the Stockholm conference of 1967 and the follow-up Paris meetings in 1971, when developing nations demanded significant alterations in the copyright system. They stressed a loosening of copyright protection in the interests of equity in the distribution of knowledge and to permit speedy reprinting and translation of books related to educational and scientific development. The end result was a compromise. As one observer put it: "The major publishing nations recognized the needs of the developing countries for inexpensive textbooks and measures that would enable them to publish such editions. But they regarded the proposals of Stockholm as too drastic and refused to go along with them. The conflict endangered the very existence of the international copyright system" (Unesco 1981: 23).

The developing countries were attempting to loosen copyright protection for educational and scientific books by introducing a mechanism of compulsory licensing that would permit publishers in developing countries to reprint or translate material at a specified time after its original publication once permission to reprint had been sought from the original publisher, even if that permission was not in hand (India 1967; see also de Freitas 1983, Olian 1974, and Unesco 1973). They were also forcing a debate about the meaning of copyright in the context of North-South inequalities and in the face of the domination of the copyright system by the major industrial nations. The heated Stockholm discussions resulted in an agreement which provided significantly liberalized rules for developing nations. This agreement proved to be quite controversial. Britain refused to go along with it; other major Western publishing nations expressed reservations. After further protracted discussion and another conference (under Unesco auspices in Paris in 1971), which included representatives of both the Berne Convention nations and the UCC, a solution was found which provided some liberalization but which prevented books obtained under compulsory licensing procedures from being used for commercial profit and from being exported from the country of publication (Unesco 1981: 23).

Although it is now possible for developing nations to obtain compulsory licenses to reprint or translate textbooks and other educational books, there are still significant limitations that reflect compromises between the industrial book-producing nations and the developing consuming countries. For example, it generally takes at least three years for a compulsory license to become available for publication in English, French, or Spanish; less universal languages require only one year. Each license is issued only for the country in which it is to be used, and the books are not to be exported (de Freitas 1983: 61ff.). Thus developing-country interests were in the end successful in establishing the basic concept that there must be some flexibility in the international copyright system; but the major copyright powers were also successful in limiting the scope of the reforms and in binding the developing world to the international copyright system. They were able to limit the reforms to educational books and books used for advanced scientific purposes. General books, fiction, magazines, and the like are not subject to compulsory licensing at the present time.

Although there were serious debates about the basic nature of the copyright system before the reforms, virtually everyone is now committed to the system and is willing to work within it. Those countries which are currently outside the international copyright system (such as China and Malaysia) are moving, albeit slowly, to join. Copyright is a curious amalgam of ideology, belief, and pragmatism (Barker 1970). Copyright, with few exceptions, protects the haves; it is a form of monopoly that gives basic control over knowledge to the creator of that knowledge or the designee (usually a publisher or, these days, a software company) (Chafee 1945). Indeed, it was developed more than three centuries ago in England precisely to protect monopolistic practices (Parsons 1974). Copyright has also been used for censorship, and in its early days it was seen by the authorities as a means of controlling knowledge.

The Context of Inequality

Copyright functions in an interdependent international system of intellectual and commercial relations. There are specific problems in developing indigenous cultural and educational systems and the infrastructure that goes along with them. The nations of the developing world find themselves at a considerable disadvantage when building their own knowledge systems in this network of inequality. Copyright is but a small part of a much larger international system that controls resources, trade, foreign assistance, and many other factors. By looking at copyright as a microcosm of the larger system, it is possible to see in some detail the nature of the disadvantages faced by the developing world.

The international network for distributing knowledge is one of considerable complexity. Book publishers, film distribution enterprises, news networks, and (recently) data bases and computer firms are all part of the system by which knowledge is distributed throughout the world.[4] Academic and scientific institutions play a role not only in the creation of knowledge but also in its distribution. Individual scholars and intellectuals are themselves very much a part of the system.

The fact of inequality is clear. The bulk of the world's

scientific research is done in a few of the industrial nations—notably the United States, the United Kingdom, Japan, France, the Federal Republic of Germany, and the Soviet Union. It has been estimated that close to one-quarter of the world's expenditures for research and development are made in the United States. The major universities, with their well-equipped libraries and laboratories, are located in a handful of industrial nations. These institutions attract the best scholars and, incidentally, train a significant portion of the highly educated personnel from the developing world.[5] By every measure, the bulk of the world's productivity in research and scientific development is to be found in the industrial nations.[6] This fact has many implications. The research needs of the industrial nations are naturally those served by this research, and the channels of dissemination are geared to the producing nations. Most of the markets for scholarly books and periodicals are in the industrial nations, and this fact further skews the network for disseminating knowledge. The largest academic libraries are located in the industrial nations and constitute the main purchasers of scientific books and journals. A large academic profession and student population are a further source of both the production and consumption of intellectual material.

Language is a key factor in the international knowledge network.[7] English is the first language of 345 million people and the second language of another 400 million, and it is the native language of twelve nations and the semiofficial tongue of another thirty-three nations (*U.S. News and World Report* 1985). This gives English a considerable advantage as a language of scholarly communication and research. Along with Spanish, French, and (to a much lesser extent) Russian, English dominates the network for distributing knowledge. A large majority of the world's major scholarly journals and academic books—the key means of distributing knowledge—are in English, and most of the rest are in the other three major international languages. Even in Europe, scholars in countries such as the Netherlands, Sweden, and even Germany frequently publish their work in English to achieve the maximum international exposure.

Developing countries are dominated by the major international languages, and this dominance places a further strain on limited publishing and other resources. It also makes these countries dependent on the nations which publish in the major international languages. The vast bulk of the world's translations are made from the major international languages into a variety of other languages, including such widely used but scientifically less-developed languages as Chinese, Hindi, Bengali, and Portuguese. The necessity to translate material from English or the other international languages into a variety of developing-country languages creates problems of finding the technical expertise to do the translations, mustering the ability to publish those translated works, and functioning in the framework of the international copyright system so as to secure permission to do the translations in the first place.

The infrastructure for disseminating knowledge is basically controlled by the industrial nations. The prominent publishing firms are located in those nations, and they control the production and the distribution of books around the world (K. Smith 1975). There is a large trade in the export of books from the industrial nations to developing countries. The major publishers have branches throughout the developing world and are in fact multinational enterprises. Indeed, about half the sales of the British publishing industry are dependent on overseas trade, much of it to the developing world, and the French have a similar export market. The Americans, with only 10 percent of their publishing output exported, are more insular; but they too have had a growing interest in export sales—for political and cultural as much as for commercial reasons. Book exports and the impact of books from the industrial nations on the developing world are not only matters of profit but also directly linked to the foreign policy goals of the major industrial nations (see Benjamin 1984). It is therefore very much in the interest of the major book-exporting nations to continue their role as centers for the creation and distribution of knowledge.

Not only are the physical means of book creation and distribution (that is, publishing) in the industrial nations but also the decisionmaking apparatus for scientific and educational knowledge in general. The major journals are edited in a few nations—largely the United States, the United Kingdom, and, for the francophone world, France. Much of the rest of the world is in a peripheral relation to these major intellectual centers. The decisions made by journal editors, book publishers, and others who are gatekeepers of knowledge reflect the intellectual and scientific environment in which they function (Coser 1975).

Although the basic technologies of book production—typesetting and printing—are widely disseminated throughout the world (in fact, several developing nations, including Hong Kong, India, and Singapore, do a significant amount of printing and typesetting for publishers in the industrial nations, sometimes with the latest technologies), the basic technological innovations and developments occur in the industrial nations and are in general controlled by them. Developing nations must import (often under license) these new technologies or purchase machinery abroad, which makes them dependent on the industrial nations. Even such a basic element of book production as paper, the technology for which is simple and widely disseminated, is

basically controlled by a few industrial nations, with the consequence that prices are high (Becker 1982).

The impact of the very newest technologies on the developing world will be considerable, and the development and control of these innovations are also in the hands of the industrial nations. Data bases in the West are tied into the major international languages and use material generated from Western sources. Satellite transmission systems for international communication are similarly centralized, although several developing nations, including India and Indonesia, have their own satellites for educational and other purposes. The hardware for the new technologies, such as the newest reprographic machines, is manufactured in the industrial nations and is usually expensive to buy and difficult to repair. This situation, too, creates problems for developing nations.

The network for creating and disseminating knowledge is both complex and unequally structured. The copyright system is very much a part of this system of relations. In part, the sheer weight of market forces, the major languages of publication, the location of the basic infrastructure, and the nationality of most scientists and authors dictate that the industrial nations, and particularly the major publishing nations such as the United States, the Soviet Union, the United Kingdom, and France, are the major centers for creating and distributing knowledge. The structure of the international network also plays a role. The multinational publishers are well established, and their vested interest in maintaining the status quo is considerable. Finally, the policies of the industrial nations protect the status quo because frequently it is in the interest of those nations to maintain control over the structures for disseminating knowledge.[8] It is hardly surprising that copyright should be enmeshed in this powerful system and that those nations on the periphery, the nations of the developing world, should wish to extricate themselves from it.

The Issue of Piracy

Piracy is big business. It is estimated that $1 billion worth of books and another $1 billion of tapes and cassettes are pirated annually (Alikhan 1984). These alarming statistics do not include unauthorized photocopying, which is also a major problem for copyright holders. Piracy is usually defined as the unauthorized publication of a book, tape, cassette, or (recently) computer software for commercial sale. Piracy occurs in all countries, but it has become a key issue among publishers in relation to the developing world because the bulk of large-scale commercial piracy occurs in developing economies. The publishers of the industrial nations are very disturbed about piracy and have applied pressure not only on developing-economy pirates but also on their own governments in an effort to link favorable foreign trade terms or economic aid to the eradication of piracy. Sometimes this effort has been effective. For example, the government of Singapore is currently revising its copyright law and stepping up enforcement in response to pressure from the United States, Singapore's largest trading partner. Book piracy has its ups and downs in the major pirating economies (currently located mainly in South and East Asia), but largely for economic reasons, the practice continues. Taiwan, for example, has been probably the largest book pirate and still engages in the practice, but the scope of the piracy has declined significantly. This decline is partially due to external pressure but perhaps more to the Taiwan economy's growing sophistication, which makes it in its interest to respect copyright, patents, and the other legal regulations of the transfer of knowledge and technology (Kaser 1969; *Bookseller* 1970).

What is piracy and literary theft from the point of view of the industrial nations is something else to publishers in developing countries. Although few in the developing world are currently willing to support publicly the violation of international copyright laws, there are some arguments to be made against copyright regulations in general and as they apply to the developing world in particular. There is of course a line of argument in opposition to the concept of copyright which claims, among other things, that a system that creates a monopoly and limits access to knowledge on the basis of who originally produced the knowledge is unfair and unwise.[9] As one spokesperson for the developing world put it: "We in South-east Asia and the Third World are the countrysides of the urban-industrial publishing centers of the West. And just as with most countryside populations, we are perennially treated to avowals of concern for our development from the metropolitan powers—to no avail" (Valdehuesa 1980). There is a clear difference of opinion concerning piracy, although at the present time few openly espouse violation of copyright rules. What is not discussed, however, is done in many countries on a large scale. As one Western publisher stated, a large number of economies (including a few industrial ones) are known to be pirates. In 1980, the following were among the economies mentioned as significant violators of copyright: Taiwan, Korea, and the Philippines (as the three largest), China, the Dominican Republic, the Arab Republic of Egypt, Hong Kong, Indonesia, Malaysia, Pakistan, Peru, Singapore, and Thailand Countries in which piracy occurs occasionally include Colombia, Germany, India, the Islamic Republic of Iran, Iraq, Japan, the Netherlands, and Syria (Asser 1980).

Book piracy occurs in many different ways. In Taiwan, for example, unauthorized reprinting of books from abroad is a significant part of the publishing business.

Taiwanese pirates specialize in producing English-language book titles and selling them in East and Southeast Asia and occasionally in the West. Popular trade books, reference books (including the *Encyclopaedia Britannica*), key medical books, university texts, and many others (in editions looking exactly like the original but generally printed on poor paper) are widely sold at prices well under half the original cost.[10] Publishers, or often free-lance printers, reprint a few titles which they think can be sold quickly. These books are frequently best-sellers from the West, which have a brisk sale in many developing nations.

There is also the business of unauthorized translations from Western languages. Either through lack of effort or because negotiations with Western publishers break down or costs are too high, many publishers in developing countries fail to obtain formal permission to publish translations of Western books. There are no statistics on unauthorized translations, but the volume issued must be significant. All kinds of titles are translated, but especially educational books. There is a ready market for translations of school and college textbooks, and the Western publishers of such books are sometimes the least informed about the needs of the developing-country book industry. Indeed, the call by developing nations for compulsory licenses stemmed from this dilemma, and the campaign proved to be most successful with regard to school and college textbooks.

A recent development in piracy, stimulated by the rapid growth of technology and the increasing sophistication of a number of developing economies, is the unauthorized reproduction of computer programs, software of all kinds, and microcomputers and computer parts. A mini-industry related to computer technology has developed in Hong Kong, Singapore, and Taiwan. The pirating of tape cassettes and phonograph records has long been a problem in Southeast and East Asia.

It can be argued, on the one hand, that pirated books rob the original publishers (and of course the authors) of their fair share of royalties and prevent the authors from controlling when and where their work will be published. On the other hand, the editions brought out in developing countries constitute a very minor share of the world market for most books: the profits earned by the original publishers from such editions or from export sales to those countries represent a tiny fraction of the total. It can also be argued that the pirate is frequently creating a market for the book, because an imported version would be too costly for local book buyers. Publishers in the developing world have frequently complained that Western publishers are slow to respond to requests for reprint rights, that they charge too much, and that they are uninterested, preferring to export a small number of copies at high prices rather than to grant rights for a larger, low-cost edition. It is often said that U.S. publishers are not sufficiently attuned to the export market to be able to handle it effectively and that British publishers, dependent on the market, prefer to export their own books rather than grant rights.

The issue for textbooks and scientific books is somewhat different because, in general, mass markets are not involved. Book people in developing countries have argued that the West already dominates the creation of knowledge and should not be able to prevent its distribution. It should therefore be possible to reprint freely or to translate educational books in the developing world without undue delay from Western publishers or the payment of high fees. Furthermore, many developing nations lack foreign exchange to pay for book imports or reprint rights, and this is another reason for an open market for reprinting books, particularly for educational purposes.

The discussions of compulsory licensing revolved mainly around the need for educational books in the developing world. It is probably the case, although statistics do not exist, that since the liberalization of the rules for compulsory licenses, the amount of unauthorized reprinting or translating of educational and scientific books has diminished significantly. Western publishers have been engaged in a major campaign to eliminate book piracy, and although there has not been complete success, there has been a definite increase in copyright consciousness in the developing world.

It is also the case that what is piracy to one nation is fair use to another. China does not now belong to any of the international copyright agreements and thus is not bound by them. The Chinese engage in extensive translations of books from the major Western languages (and from Japanese) and publish them without paying royalties or obtaining permission. Such actions are not illegal under current Chinese law. China, however, is in the process of drafting a copyright law and will join one of the international copyright treaties. A number of other developing nations have enacted far-reaching compulsory licensing laws which permit them to use materials published in other countries fairly freely. Publishers in industrial nations claim that this is piracy, but under local laws it is not. Although it is likely that book piracy is on the decline as a result of liberalized copyright rules and a greater spirit of compliance in the developing world, the phenomenon of computer-based piracy is no doubt on the increase.

Technology and Copyright

One of the most important challenges to copyright in a long time is posed by contemporary technology. For the developing world, the new communications technologies hold both promise and problems, but it can be argued that the problems outweigh the promise.

It is not possible to discuss all the technological challenges facing the dissemination of knowledge here, but it is useful to focus on those aspects of the technological revolution that directly affect copyright and that have special implications for the developing world.[11]

The new technologies, such as data bases, computer-assisted composition and printing techniques, and the rapidly growing field of reprography, are all developing in the context of the global inequalities described earlier. Although developing nations may be able to make use of some of them, these innovations originated in the industrial nations and are, with few exceptions, produced in them and controlled by them. The developing world is a consumer of the new technologies, generally on terms set by the industrial nations. The innovations are frequently but not always expensive, and they are inevitably "high tech," meaning that developing nations do not have the infrastructure to manufacture these items and frequently have problems in assimilating them into the existing technologies. One commentator recently argued that the new technologies will permit the developing nations to leapfrog the traditional technologies and move directly into the twenty-first century. Certainly the new technologies are a continuation of the pattern of inequality and keep the developing world dependent on the industrial nations—even exacerbating the situation by introducing very complex and expensive technologies that are difficult to assimilate (D. Smith 1975).

Virtually all the new technologies have implications for improving the distribution of knowledge and for copyright (see Rodwell 1985). The development of data bases, for example, has the potential to bring the latest knowledge from sources all over the world to developing countries, but it also will inevitably tie users to the principal international language for the dissemination of Western knowledge (English), to the hardware provided by the corporations which have developed and own the data bases, to the concepts of knowledge and research which are used by the owners, and to the high costs of obtaining material through the data bases. This technology also will exacerbate the split between the urban centers in the developing world, which are more likely to have access to these new technologies, and the rural peripheries, which are not. The copyright system means that the collectors and disseminators of data-base knowledge will have control over it. The developing nations will be consumers of knowledge created and distributed by Western sources in the English language. Indeed, large parts of the developing world will simply be cut off from data-base knowledge systems altogether because of the cost or because the local infrastructure is inadequate to absorb and use the new technologies.

Technological innovations in printing and composition also have mixed, though generally more positive, implications for the developing world. Although these developments are products of Western technology and are for the most part manufactured in the industrial nations, they give developing nations with small-scale publishing industries the possibility of building up their local capability at relatively low cost. Computer-assisted photocomposition of text material has stimulated small-scale publishing and has lowered the cost of producing short-run publications and books in the West. This technology can also help the developing world, where printings for scholarly and educational materials may be small.

Offset printing, a widely used printing innovation, has also been a boon to pirating and to reprinting material in general. This fact, of course, has major implications for copyright because it reduces the cost, and therefore the economic risks, of piracy. It is unlikely that the Taiwanese printers would have been so active in reprinting Western books if the technology for quickly reproducing material without setting it into type did not exist.

One of the most significant technological challenges to copyright is the photocopying revolution—a revolution that continues to improve ways of quickly, inexpensively, and expertly photocopying printed material of all kinds. In the United States, photocopying of published material now runs into billions of pages annually, and a significant part of this photocopying takes place in clear violation of the copyright laws. The concept of fair use, included in the new U.S. copyright law, is being constantly defined in the courts, but nevertheless it is ignored by most individual copiers and by many institutional users as well (Weinberg 1975). The intricate, yet very important, issues involved in photocopying library copies of journals are beyond the scope of this chapter; but as recent litigation in the United States indicates, the issues are at the heart of the survival of academic journals (one of the key means of distributing knowledge), the role of libraries, and the implications of dissemination networks in a technological age (Henry 1975; see also Ladd 1983). In a number of countries, copyright authorities and the courts have been trying to accommodate copyright protection to the rapidly advancing techniques of photocopying, thus far with only modest success.[12] Technological developments have far outstripped the capabilities of the copyright system, both within nations and internationally, to control the situation. Some have argued that authors and publishers would survive perfectly well without strict controls over copying and that in fact photocopying contributes more to society by giving easier access to knowledge than it takes away by limiting the economic benefits to the producers of knowledge (Leavens 1981).

In many ways, photocopying has been a boon to developing nations. The basic technology is not very complex. Some developing nations produce machines; others import them. Although there are no adequate data, it

seems that there are fewer controls on the use of photocopying and that users of knowledge have easier access to photocopied materials than in many industrial nations. It is possible, for example, to obtain photocopies of books in a number of developing nations at prices well under those of the original publications.

The technological innovations in communications, printing, and copying of the past few decades have come at the same time as the efforts of many developing countries to build up a basic knowledge industry (O'Brien 1980; see also Bell 1969). The possibilities of using the new technologies to develop an efficient and cost-effective knowledge industry are considerable and have been exploited by several countries—mainly those with highly trained personnel capable of mastering the new technologies, such as Hong Kong and Singapore, which have become major printing and publishing centers. Other developing nations have combined old technologies with elements of the new. But many nations have found entering the new age of the production of knowledge to be very difficult; they have remained dependent on outside agencies, usually the Western-based multination publishers, for their book needs, including quite often school textbooks.

The international system that tries to control the dissemination of knowledge—namely, copyright—has struggled to keep up with the new technologies as well as with the other challenges that have been discussed in this chapter, and the result has been confusion. The basic protections provided to authors and publishers under the copyright agreements are difficult to interpret in the light of some of the technological innovations and are even more tricky to enforce.

Textbooks and Copyright

The production and distribution of textbooks for schools and postsecondary institutions is an important but specialized part of the total process of distributing knowledge. In the developing world, textbooks constitute the dominant segment of the publishing enterprise. In some smaller developing countries, textbooks are virtually the only indigenous books published. In many nations, as already discussed, textbook publishing permits other kinds of publishing to occur because it provides the economic base for the industry. Even where primary-level text publishing is in government hands, which is increasingly common in the developing world, secondary-level text and educational publishing is a mainstay of commercial publishing. In the United States, textbook publishing is the largest single segment of the publishing business, accounting for 30 percent of the income of U.S. publishers.

Textbooks are not only a key element in the publishing industry but also crucial for a nation's educational system. Without adequate textbooks, the effectiveness of the school is hampered. Many researchers argue that textbooks are among the most important elements in ensuring success for students (see Heyneman and others 1978; see also Wagner 1979). Most nations recognize that textbooks must meet the educational needs of school students and that they should reflect national values and orientations. This presents special problems for a number of small countries that import textbooks, frequently from the former colonial power.

Who should produce and distribute textbooks is also a key issue in the developing world. Textbooks were frequently imported during the colonial era and after independence were published by local affiliates of multinational publishers (or imported). The traditional facilities for production and distribution continued to be used—perhaps to the detriment of any indigenous publishing industry. Later, many governments in developing countries moved to nationalize textbook publishing by establishing agencies to write, edit, produce, and distribute school texts. Although this arrangement did produce indigenous books, it also created problems. Very frequently the efficiency of these operations was low and the cost high. Furthermore, when the most lucrative and steady part of the publishing business was removed from the private sector, independent publishers found it very difficult to build a business by tapping only the general and library markets in their countries (see Altbach 1975). Thus unanticipated consequences of the nationalization of the textbook business included weakening the indigenous publishing industry and causing unnecessarily high production costs for school texts.

Copyright plays an important role in developing-country textbook publishing. The international aspects of copyright are relevant, because many books or segments of books include imported materials. National copyright regulations are also important because they govern the publication of all books within a country. On the international level, the provisions of the Berne Convention and the Universal Copyright Convention cover all books, including texts and educational books. Thus educational publishers are covered by the same restrictions that affect publishers generally. The one important exception to the broader copyright coverage is compulsory licensing, which permits publishers and educational agencies in the developing world easier access to books and journals published in the industrial nations. The specific regulations governing compulsory licensing are complex and do not permit completely free access to overseas material, but the arrangement, which is now part of the international copyright system, permits easier access and also, in some instances, reduces the cost of using foreign materials for educational purposes.

Many developing-country textbooks are adapted, in

whole or in part, from educational materials developed in industrial countries. The legal copyright protection afforded to such adapted material is less clear than for other material. The copyright treaties deal with the broader questions of appropriate quotations from copyrighted works, but the free adaptation of material is not covered. Furthermore, national copyright laws vary on these issues, and it is sometimes difficult to understand the ramifications of the legal restrictions. There is widespread adapting (and sometimes simple reproduction) in developing-country textbooks—because the pressure to publish textbooks is intense and there is frequently a dearth of qualified local writers and curriculum experts. It is particularly common for textbooks published in some of the less widely used developing-country languages to adapt or copy foreign materials freely without regard to copyright restrictions. The legal, as well as the moral, political, and educational consequences of such adaptation and reproduction are issues which have not been fully addressed.

National copyright regulations also have a considerable impact on textbook development. Textbooks, like other books, are subject to national copyright laws. Developing-country copyright regulations stem largely from the laws put into place by the colonial powers or borrowed from the major Western copyright laws. Thus there is no special approach to copyright in the developing world, and the laws found in developing countries resemble one of the three major ideological currents in thinking about copyright. Few developing nations have modified their copyright laws to reflect their specific national needs. Textbook development must therefore fit into the context of national laws patterned on foreign models.

Textbook publishers must be aware of the copyright rules that apply to their work. Legal restrictions on the use of copyrighted material (for example, illustrations) in books, on the length and use of quotations, on the duration of copyright protection, and on translation rights must all be kept in mind by textbook authors and publishers. In general, national copyright laws do not provide any specific rights to educational publishers or educational books. Copyright laws protect authors and publishers and make the use of copyrighted materials subject to the interests of the copyright holders. It is usually possible for textbook publishers to observe national copyright laws and still publish good textbooks. Of course, such compliance may add to the cost of textbook development because copyright holders may require payment for permission to use or adapt material. Copyright also adds a layer of bureaucratic procedure as well, because materials can be used only with appropriate permission.

The development of textbooks in developing countries is handled in many different ways. Where a ministry of education is responsible for text development and publication, it is often easy to surmount copyright problems, because much of the needed local educational material is very likely in the hands of other government agencies. Where the private sector is involved, restrictions may be greater. In most developing countries, copyright problems stem more from the need to adapt and use foreign materials than from national copyright regulations.

Textbook publishers in the developing world have had to weigh the advantages and disadvantages of reprinting, translating, and producing locally written texts (which are frequently based on foreign material) or importing books. Copyright considerations enter into this equation in a significant way, because the flow of knowledge is controlled by the international copyright system. Multinational publishers, officials of the ministry of education, private publishers in developing countries, and frequently school officials have important roles. Both cost-related issues and questions related to educational and social policy enter into the equation concerning decisions about textbook production. Copyright is very much part of the situation as well. It is an aspect which frequently delays textbook production and means that textbook authors and planners must modify their educationally generated plans to meet commercial and legal mandates.

The Future of Copyright in an Unequal World

Copyright is well-entrenched. It is powerful as an idea and as a set of legal mechanisms for controlling the international flow of knowledge. There seems to be a strong international consensus, which includes most developing nations in favor of the basic international copyright system as it has developed since the late nineteenth century and particularly as it has been modified since World War II. The adherence of the United States in the nineteenth century and of the Soviet Union in the mid-twentieth century (after both nations flouted copyright as they built their own national publishing industries) means that all major publishing nations, except China, are part of the system. After considerable controversy during the 1960s, the industrial nations have provided some of the modifications that the developing nations demanded and a workable compromise seems to have been struck.

The problems facing copyright, however, are quite formidable and can be summarized as follows:

Technological. The adaptation of the concept of copyright and of the international copyright system to unauthorized photocopying and to data bases is perhaps the most difficult problem facing copyright now and in the coming decades.

Legal. The drafting and implementation of national and international codes to regulate the copyright system in the face of new challenges are a considerable task.

Control. An issue frequently ignored, but particularly important to developing countries, is who controls knowledge and what this control means. Copyright in many respects works to the advantage of the haves over the have-nots. At the present time, most developing nations have decided not to pursue this question, preferring to work in the context of the copyright system as it exists and recognizing that the control over the flow of knowledge rests with the industrial countries.

Size. Knowledge is expanding at an ever-increasing rate and, assisted by the new technologies, is being disseminated ever more widely. Both the expansion of knowledge and the new means of disseminating it create problems for copyright.

Equity. The North-South arguments over the control of and access to knowledge are continuing the heated debates of the 1960s concerning the developing world's unequal access to knowledge in all its forms. This inequality is an underlying contradiction in the international copyright system.

Critics of arrangements for controlling the flow of knowledge made their major thrust in the 1960s by applying pressure on the international copyright system and sounding their opinions through agencies like Unesco, where calls for a New World Information Order were heard (McBride and others 1980; see also O'Brien and Helleiner 1980). The debates within the international copyright system and the departure of the United States and the United Kingdom from Unesco seem to have silenced the critics, at least for the present.

There is an international consensus, regardless of political ideology, economic organization, or position in the knowledge hierarchy, that anarchy in the creation and distribution of knowledge must be avoided. For the present, most people agree that the international copyright system, despite its inequalities, provides the best means of controlling the situation, especially in the light of massive technological change. Whether the significant internal contradictions in the copyright system will stimulate dissent and questioning at some future time is not clear. Despite the stresses, some piracy, and the lukewarm adherence of some developing nations, the international copyright system appears to be accepted as the basic structure to regulate the international flow of knowledge.

Notes

1. Breyer (1970: 281). Breyer's is one of the best contemporary analyses of copyright, and his arguments are, overall, not sympathetic to copyright. See also Strong (1981).

2. For a general elaboration of this point, see McVey (1975). For a broader perspective, see Lipset (1964).

3. With the recent departure of both the United States and the United Kingdom from Unesco, the future of the Universal Copyright Convention's administration is unclear, as is the important statistical work done by Unesco in the field of books and copyright.

4. For a broader discussion of these issues, see Altbach (1977). See also Altbach (1976).

5. For further discussion of the implications of foreign study, see Altbach (1986).

6. There are some significant, although as yet fairly minor, countertrends as some developing countries build up indigenous scientific capacity and use it for local purposes. See Gopinathan (1984).

7. See Mazrui (1975). For a different perspective, see Quirk and Widdowson (1985).

8. These controls are not only evident in the area of books and publishing but also in such fields as mass communications. See, for example, Fenby (1968) and Tunstall (1977).

9. Macaulay stresses the monopoly argument in his classic anticopyright treatise. See also Leavens (1981) and Breyer (1970).

10. David Kaser states that more than 4,500 titles were pirated over a twenty-year period in Taiwan (Kaser 1969: 123).

11. For two informative overviews, see Schiller (1981) and Nordenstreng and Schiller (1979).

12. The reproduction of videocassettes, tape recordings, and computer software raises the same issues related to the control of unauthorized copying of written material from books and journals. There is if anything more pressure on nonbook copying because the demand for such material is greater and the potential profits higher.

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The Raw Material: Paper

Paul Eastman

The manufacture of reading materials—typesetting, printing, and binding—can be the most costly part of the complex publishing process. The cost of paper, in turn, is the single largest manufacturing expense—and often places the greatest demand on foreign exchange reserves. Table 8-1 provides a typical breakdown of manufacturing costs.

Paper quite commonly accounts for about 30 percent or more of the total manufacturing cost. As the number of copies per title increases, the proportion of the total manufacturing cost attributed to paper also increases. For example, when 10,000 copies are printed, the paper costs account for more than 50 percent of the manufacturing costs. Although many experts consider expenditures for authorship and physical plant to be large, even when they are included, paper costs account for 7 to 15 percent of the total cost of a publishing venture. Furthermore, after the initial costs of writing, editing, typesetting, and layout are paid by the first printing, the cost of paper becomes an even larger proportion of recurrent expenditure for reprintings. At an informal group meeting with several Unesco officials, it was agreed that paper supplies represent probably the major hindrance to book production in the developing world.

Despite their importance, paper supplies are overlooked in most organizations. In a survey of approximately ten agencies in developing countries, it was found that paper costs rarely accounted for more than 1 to 3 percent of total spending (including capital costs, salaries, and so forth). Quite understandably, 1 to 3 percent of a total budget pales beside the 60 to 70 percent which is commonly allocated to salaries. Yet the training methodologies of all the surveyed organizations were predominantly based on paper. None of the organizations could function, let alone exist, without paper. Yet none of the surveyed organizations had anybody on staff with a sound understanding of paper terminology, specifications, or prices.

Nationally, and particularly in countries where foreign exchange reserves are limited, the importance of paper takes on broader implications. The value of imported paper (for writing and printing only) rarely exceeds 1 percent of the total import bill of most developing countries. Although 1 percent may seem immaterial, when translated into currency terms its importance becomes more meaningful. For example, in 1984, Jamaica spent more than $9 million of foreign exchange for paper destined for printing and writing. Such an expenditure is equivalent to approximately 15 percent of total public spending on education. Furthermore, Jamaica also has a current account deficit of more than $337 million (World Bank 1983).

In summary, paper is an important ingredient of economic, social, and political development. It is the foundation for many educational methodologies and strategies. Paper is a significant cost in any publishing venture—and often requires the use of scarce foreign exchange. Yet despite the facts, the need for a guaranteed, low-cost paper supply is often overlooked. Paper users therefore should have a basic working knowledge of paper—and more specifically of how to get the best possible product at the lowest possible price.

Table 8-1. *Breakdown of Manufacturing Costs for Printing 5000 Copies of 200-Page Booklet*

Component	*Percentage of total cost*
Editorial services	9
Typesetting	16
Layout and assembly	2
Film and plates	17
Printing	16
Binding (saddle-stitched)	13
Paper	
Text (offset)	23
Cover (one side coated)	4

Source: Personal correspondence and analysis.

World Paper Supply

Current Situation

The most comprehensive estimates of world paper supply can be found in production, import, and export figures made available through the U.N. Food and Agriculture Organization (FAO), Unesco, and industry publications. The statistics on supply for cultural paper (a term which includes newsprint and other printing and writing paper as opposed to paper for packaging, sanitary, or construction purposes) are comparatively reliable. In 1984, world industrial capacity was estimated to be approximately 31 million metric tons of newsprint and 51 million metric tons of printing and writing paper; actual output was 11 to 13 percent less.

Production of cultural paper is concentrated in a few countries. Fourteen countries are responsible for almost 90 percent of global newsprint production; sixteen countries account for about 90 percent of all output of printing and writing paper. Canada and the United States alone produce more than half of all newsprint and about 40 percent of all printing and writing paper (FAO 1984; *Pulp and Paper International* 1985). The major paper-producing countries and their respective outputs are given in table 8-2.

Canada's dominance of the newsprint market is explained largely by its free access to the U.S. economy—high tariffs have in part meant less investment in, and a smaller market share for, the fine paper industry. The U.S. industry caters mainly to the domestic market. For the most part, growth is dictated by national demand. One reason the Scandinavian countries have been able to retain a significant market share is that they have encouraged the production of high-value papers which tend to have a greater profit margin, which in turn allows significant investments in more cost-efficient equipment. Production levels of cultural paper in the Soviet Union have been comparatively stagnant, with the output catering to the domestic market. Exports from the U.S.S.R. are limited and tend to be confined to Eastern Bloc countries and other allies. The relatively low Soviet output is caused by competing demands on forest reserves, the severe climate (which results in small tree species and hence greater unit costs), higher priorities on other industries, and inefficient operations.

The leading pulp and paper companies in the world (on the basis of sales figures) are given in table 8-3. In most Western countries, paper-making industries have undergone major changes during the past decade. The trend has been toward increased vertical and horizontal integration. For example, 80 percent of the timber concessions in Quebec are controlled by only five companies. A Swedish corporation produces paper and owns the world's largest axe factory—both of which rely on forest reserves. Very close links between publishing houses and paper concerns are commonplace, particularly between U.S. newspapers and Canadian newsprint companies. In Canada, there has been a tendency for large paper-making companies to acquire smaller paper-converting and -marketing operations. Many companies are diversifying their product lines and geographical bases

Table 8-2. *Production of Newsprint and Printing and Writing Paper, by Country*

	Newsprint (1984)			*Printing and writing (1978)*	
Country	*Thousands of metric tons*	*Percent*	*Country*	*Thousands of metric tons*	*Percent*
Canada	9,015	33.0	United States	13,374	34.6
United States	5,030	18.4	Japan	3,416	8.8
Japan	2,550	9.3	Germany, Fed. Rep.	2,525	6.5
Finland	1,543	5.6	China	2,270	5.9
Sweden	1,533	5.6	Finland	1,906	4.9
U.S.S.R.	1,400	5.1	France	1,886	4.9
Norway	799	2.9	Italy	1,718	4.4
Germany, Fed. Rep.	714	2.6	Canada	1,316	3.4
Australia	383	1.4	U.S.S.R.	1,205	3.1
South Africa	301	1.1	United Kingdom	1,034	2.7
New Zealand		1.1	Sweden	907	2.3
France	267	1.0	Brazil	633	1.6
United Kingdom	235	0.9	Austria	598	1.5
Korea, Rep.	227	0.8	Spain	585	1.5
			Netherlands	541	1.4
			India	540	1.4
Totals		88.8			88.9

Sources: Canadian Pulp and Paper Association (1985) and FAO (1984).

Table 8-3. *Leading World Pulp and Paper Producers, 1984*

Company	*Country*	*Sales (millions of dollars)*
Georgia Pacific	United States	6,682.0
Weyerhaeuser	United States	5,549.7
Champion International	United States	5,121.1
International Paper	United States	4,715.6
Boise Cascade	United States	3,816.8
Kimberly-Clark	United States	3,616.2
Crown Zellerbach	United States	3,094.5
Scott Paper	United States	2,847.3
Reed International	United Kingdom	2,826.7
Mead Corporation	United States	2,720.2
James River Corporation	United States	2,492.0
Oji Paper	Japan	2,252.3
Fletcher Challenge	New Zealand	2,001.0
Union Camp	United States	1,973.7
Container Corporation of America	United States	1,900.0
Great Northern Nekoosa	United States	1,873.3
Jujo Paper	Japan	1,862.7
Hammermill Paper	United States	1,854.9
Westvaco Corporation	United States	1,766.3
Bowater Industries	United Kingdom	1,692.4
Abitibi Price	Canada	1,650.2
MacMillan Bloedel	Canada	1,642.8
Domtar	Canada	1,578.5
Honshu Paper	Japan	1,547.3
Stora-Kopparberg	Sweden	1,520.1

Note: To help compare the relative size of some pulp and paper producers, 1981 GDPs for a selection of developing countries (in millions of dollars) are: Bangladesh, $11,910; Burkina Faso, $1,080; Ethiopia, $3,870; Haiti, $1,590; Indonesia, $84,960; Jamaica, $2,960; Nicaragua, $2,590; Peru, $23,260; Sri Lanka, $4,120; and Tunisia, $7,100.

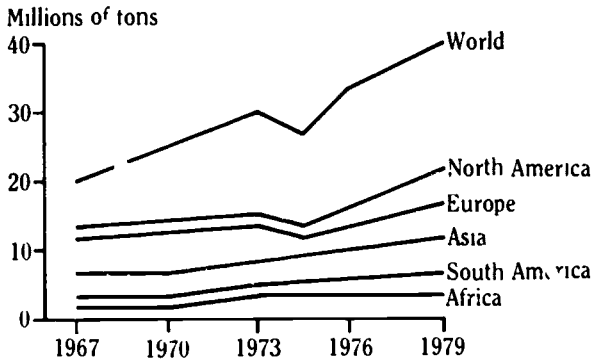
Source: World Bank data.

of operation through mergers, acquisitions, and internal growth. Several large companies dominate and will likely increase their domination of the world paper market. The intensity of the industry has been the object of several legal cases; cartel and merger investigations have been debated both before the European Commission and within specific countries (Federal Republic of Germany, Canada, and so forth). In recent years, mergers rarely have been outlawed and cartels rarely have been proven to exist.

Trends in Supply

Regional production trends are shown in figures 8-1 and 8-2. Since 1967, developing countries have slowly

Figure 8-1. *Regional Trends in the Production of Paper for Printing and Writing, 1967–79*

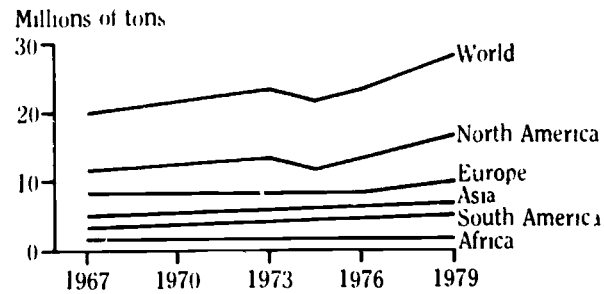


Source. Unesco (1983).

captured a greater share of the world output of newsprint and printing and writing paper. It is estimated that the developing market economies will be responsible for about 8 percent of the world's capacity to produce newsprint in 1988, compared with about 4 percent in 1978. Similarly, it is estimated that the developing countries will increase their share of the world's capacity to produce printing and writing paper from about 7 percent in 1978 to about 9 percent in 1988. Much of the increase in the production capacity of developing countries has come from large expansions in South America. Recent forecasts predict stagnant growth in Africa, Asia, and Latin America.

In the major producing countries, expansion plans have been numerous and of considerable magnitude. Following a three-year decline in announcements of the construction of new mills, plans to increase newsprint capacity in North America doubled between 1984 and 1985. Even larger expansions are expected for printing and writing paper. European capacity is scheduled to increase at an even greater rate. Hence over the next few years there will be a significant increase in the

Figure 8-2. *Regional Trends in the Production of Newsprint, 1967–79*



Source. Unesco (1983).

world's capacity to produce cultural paper—for some experts an excess capacity. Other experts suggest that the apparent overcapacity is simply part of the usual long-term cycle and will disappear in about five years or as soon as demand catches up.

Production Potential in Developing Countries

Predictions differ on the importance of developing-country production potential. Some experts suggest that new investment in the developing market economies is limited because the industry (primarily controlled by Western nations) is more concerned about increasing productivity per unit of investment. Generally, this has resulted in larger and faster machines with a very high capital cost, requiring that plants run at full capacity under very controlled conditions and turn out a limited product range. Such characteristics are often at odds with needs and conditions in the developing world.

By contrast, some experts suggest that, because of economic constraints, the drive for import substitution, and pressures to create employment, more developing nations are contemplating the construction of their own mills—even if the cost per unit of paper is higher for domestic than for imported products. Some countries have introduced protective tariffs to encourage local industry. India is a prime example. More recently, Argentina, to encourage its own paper industry (based on bagasse and willow fiber), has banned imported newsprint. Other nations are forging ahead with new mills. Argentina and Mexico each expect 100,000-metric-ton mills to begin producing this year, whereas Brazil will commission a 130,000-metric-ton mill and Nigeria will start up a plant capable of producing 50,000 metric tons. India has plans for a 50,000-metric-ton mill, and consideration is being given to more new mills in Brazil (70,000 metric tons), Indonesia (100,000 metric tons), the Republic of Korea (140,000 metric tons), and Thailand (100,000 metric tons).

India is now virtually self-sufficient in printing and writing papers and is making considerable efforts to reduce its reliance on imported newsprint. The most significant increase in output from the developing world is in Brazil. Brazil's success is tied to the availability of low-cost timber reserves (large plantations of fast-growing eucalyptus trees) and the recent discovery of substantial deposits of relatively inexpensive oil supplies. Between 1975 and 1984, paper production doubled to approximately 3.5 million metric tons. In 1985 alone, five new paper mills came onstream.

In some developing countries (Bangladesh, China, India, and Peru), considerable progress has been made in the utilization of nontraditional sources of fiber. Bagasse, agricultural wastes (straw), rice, bamboo, and even banana fibers can be and have been incorporated into pulp and paper making.

The use of waste paper also is receiving increasing attention—albeit more often for the production of industrial and sanitary paper. In fact, many small mills in India depend on imported waste paper as their primary source of fiber. Although a recycling plant is a viable first step in a new paper-making industry, significant obstacles remain to making greater use of domestically available waste papers. For example, an extensive collection facility must be available. In the developing world, with some notable exceptions, there is simply not enough waste, and that which does occur is widely dispersed, making collection prohibitively expensive. Furthermore, in the developing world waste paper has important alternative uses such as packaging. When it ultimately does become available for recycling, the fibers often have been so seriously damaged that it is no longer a viable raw material.

An abridged version of the FAO survey of projected (1983–93) pulp and paper mills in the developing world is shown in table 8-4. Although the number of entries in the survey is reassuring, the total anticipated increase throughout Africa or South America is similar to the planned increase in output in Canada alone.

Obviously, some individual developing countries are striving to become self-sufficient in the production of cultural paper. But after the most optimistic projections for developing-country production are compared with current and predicted increases in capacity in Europe and North America, the output of the developing world is and will continue to be relatively modest. With few exceptions, there appears to be limited opportunity for the developing world to break into the international paper market. Most industry experts agree that over the next five to eight years the world will likely experience sufficient capacity both for newsprint and for printing and writing paper. Because of the large investments required for a pulp and paper industry, the lack in some cases of an acceptable and accessible source of fiber, the competing demands on national economies, and the presence of strong international competition, developing-country consumers likely will continue to depend on imported paper products for some time into the future.

World Paper Demand

Although figures for world production levels are both available and reliable, actual and forecast figures for demand are more difficult to find and are often suspect. On occasion, a country's official data contain unexplained inconsistencies. For example, one government document gave newsprint imports as 28,000 metric tons; in another official publication, the total was 14,500 metric tons. The price per metric ton also varied from $600 to $474.

Table 8-4. ***Projected Paper Output in the Developing World, 1983–93***

Region and country	*Tons of newsprint and printing and writing paper produced*
Africa	512
Algeria	50
Egypt, A.R.	180
Ghana	50
Kenya	15
Madagascar	38
Malawi	11
Morocco	100
Sudan	35
Tanzania	30
Zambia	30
Central America and the Caribbean	325
Cuba	70
Honduras[a]	100
Mexico	150
Nicaragua	5
South America	859
Argentina	110
Brazil	426
Chile	151
Colombia	87
Ecuador	50
Peru	35
Asia	3,093
Afghanistan	5
Bangladesh	15
Burma	30
China	6
India[a]	1,180
Indonesia[a]	523
Iran	270
Korea, Rep.	198
Malaysia	178
Nepal	43
Pakistan	72
Philippines	158
Sri Lanka[a]	75
Thailand	120
Turkey	175
Viet Nam	45
Total	5,011
Canada	729

a. Includes a small but identified amount of noncultural paper products.
Source: FAO (1984).

Current Situation

Consumption levels in most developing nations are below the levels set by Unesco as the minimum amount considered necessary to maintain educational and social development (that is, 40 kilograms per capita). Both total and per capita consumption of cultural paper is low in the developing market economies.

World consumption in 1983 (versus production and capacity given above) was 25,300 million metric tons for newsprint and 41,400 million metric tons for printing and writing paper. North America and Europe accounted for more than two-thirds of the intake of cultural paper. Although developing countries account for more than half the earth's population, they consumed only 7 to 9 percent of all cultural paper. The United States alone consumed 50 percent of the world's newsprint. Each year since 1974, Japan has consumed more newsprint than all developing market economies in Africa, Asia, and Latin America combined.

Globally, consumption is about 5 kilograms per capita for newsprint and 8 kilograms per capita for printing and writing paper. There are huge disparities in per capita consumption between developing and industrial countries (table 8-5). The significance of such discrepancies is unknown.

Consumption Trends

Over the past decade, the rate of growth in consumption of cultural paper in Europe and North America has been slowly easing because of recent economic downturns and changes in data-processing methods. Thus the rate of overall growth in newsprint consumption is greater (5 percent a year) in developing market economies than in industrial economies (3 percent). Despite rather modest global growth rates, there has been a significant increase in per capita consumption of newsprint only in Japan and, to a lesser extent, in the centrally planned economies and in the Far East. In addition, total newsprint consumption in the United States increased significantly (8 percent) in 1984 as a result of a strengthening economy.

Although world newsprint consumption has quadrupled since the 1940s, the magnitude of international

Table 8-5. ***Consumption of Cultural Paper***
(kilograms per capita)

Region or country group	*Newsprint*	*Printing and writing paper*
World	5	8
Developed market economies	35	54
Developing market economies	1	1
North America	45	61
Western Europe	22	50
Africa	Less than 1	1
Asia	2	3
Oceania	25	15

Source: Unesco data.

trade has remained relatively stable. The primary reason for such stability has been the large and guaranteed supply of newsprint from Canada to the United States.

One industry expert (Graff 1984) has predicted that the United States and Europe will reach their newsprint consumption peaks in or slightly before 1990–95. In the centrally planned economies (particularly those belonging to the Council for Mutual Economic Assistance), consumption reached its maximum in 1980 and has been on a plateau or even decreasing since. Growth in consumption in the developing world is strongest in Asia and to a lesser extent Latin America. Restricted consumption is expected throughout Sub-Saharan Africa. Thus over the next fifteen years, world newsprint consumption is expected to increase by no more than 1 percent a year.

The rate of growth in consumption of printing and writing paper is also greater in the developing (11 percent) than in the developed market economies (7 percent). Of all regions of the world, the most significant relative growth in total consumption is in Sub-Saharan Africa, yet in absolute terms the region is responsible for only a very small part of world paper use.

In summary, despite a few cyclical variations, there has been a continuous and unbroken growth in the world's consumption of paper and paperboard. The average annual growth in the consumption of cultural paper throughout the world ranges from 2.5 to 3.5 percent. Over the past twenty-five years, consumption of newsprint has grown at a slower pace than that of printing and writing paper. Total and per capita consumption levels in the developing world are substantially lower than levels found in the industrial economies. Although the rate of growth in consumption has increased (due in large part to increases in South America and Southeast Asia), little of the world's stock of cultural paper is consumed by the developing world.

Predicting Consumption of Cultural Paper

Although it is difficult to predict precisely future levels of consumption of cultural paper, various attempts have been made. In Europe and North America, data on historical trends and elaborate mathematical models are available to help forecast future market prospects. For the most part, factors which have been used to explain levels of paper consumption are often related to the state of a nation's economy (gross domestic product, income per capita, and so forth). For example, in industrial economies, as national income grows so usually does paper consumption. In buoyant economies, manufacturers invest in advertising, thus increasing paper use. In the developing world, however, the correlation between national income and paper consumption is not so straightforward, and in several instances it has been shown that national income has no effect on consumption.

Because there are few substitutes for cultural paper, price changes are thought to neither encourage nor discourage consumption over the short term—at least in the industrial countries. But price plays a very significant role in smaller countries which have limited (or no) production and are dependent on imports. Price increases (and associated importation costs such as freight, insurance, customs, and so forth) can have a serious dampening effect on consumption, especially in low-income countries. In some developing countries, lack of foreign exchange has an identical effect—lowered consumption.

Obviously, in many developing countries, the extent of literacy is a very significant indicator of paper consumption, especially for printing and writing paper. A Unesco report states that a correlation between newsprint consumption and literacy cannot be proven. But with the increasing use of newsprint in mass literacy and education programs (in Ethiopia, Jamaica, and the Philippines) and with the increasing number of newly literate people and their demand for reading material, certainly a linkage must exist.

In summary, the factors which seem to influence the consumption of cultural paper in the developing world are price (including the availability of foreign exchange in importing countries) and literacy rates. Although income is significant in the industrial countries, apparently it is not important in the developing world. Similarly, price and. especially, literacy indicators are noteworthy in the developing world but are of minor importance in the industrial economies.

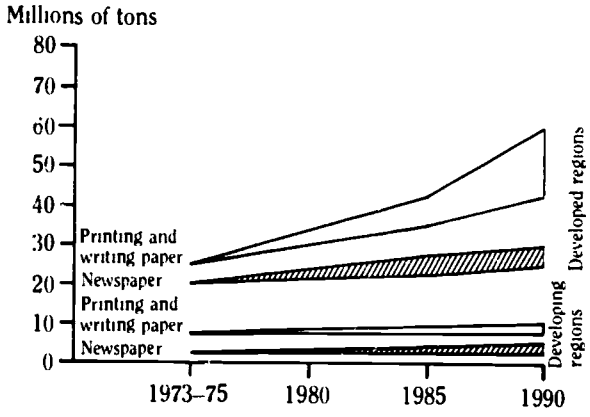
Most predictions now suggest that up to 1990, the growth in consumption of cultural paper will be slower than in the past. Still, the growth rate of the developing world is expected to be about twice the rate anticipated in industrial countries. Demand prospects are strongest in Asia and to a lesser extent in Latin America and North Africa and the Middle East. Modest increases in consumption are expected in Sub-Saharan Africa. By 1990 the FAO predicts that the developing market economies will consume between 11 and 15 million metric tons of cultural paper—or about 12 to 13 percent (versus 7 to 9 percent at present) of total world output. Figure 8-3 depicts anticipated levels of world consumption to 1990.

Prices and Marketing

Prices

Between the 1930s and the 1970s, the price of most paper products increased three to four times—similar

Figure 8-3. *Outlook for Consumption of Newsprint and Printing and Writing Paper, 1973–75, 1980, 1985, 1990*



Source Unesco (1983).

to price increases for most commodities. After deducting inflationary effects, the FAO has concluded that for most grades of paper, absolute prices have actually declined over the past twenty-five years. Yet a price surge did occur in the mid-1970s because of escalating energy costs: newsprint prices increased by 27 percent and prices of printing and writing paper increased by 33 percent as measured in constant dollars. Since the energy-led increase, paper prices have tended to resume their traditional pattern of rising, on average, 3 to 5 percent a year.

Although paper manufacturers are often accused of acting as a cartel, there is little concrete evidence of this. Yet one cannot completely dismiss suspicions that world paper prices have little to do with the cost of production—that they are not determined by market forces and instead that prices are set through informal agreements among the major mills.

For newsprint at least, regional pricing seems to be commonplace. FOB mill prices given to paper users in North America are usually different from prices quoted to consumers in other parts of the world, despite the fact that the same paper satisfies both markets. Regional pricing works both for and against consumers in developing countries.

Actual selling prices routinely fluctuate. In a recent sale to a Caribbean consumer, the CIF price was approximately $460 a metric ton (ex-mill $315 a metric ton) compared with the published North American market price of $515–40 a metric ton. Rarely do published prices apply, and as noted below it is quite common to find domestic North American newsprint prices in the range of $450–500 a metric ton. The variation in price from destination to destination is evident in table 8-6.

Although disaggregated information is not available, some of the variation must be due to the size of the individual orders which make up each total—that is, if a national total consisted of only a few large orders, the average price would be considerably lower than if the national totals included numerous small purchases. Another possible explanation for relatively high costs may be the absence of competitive bidding. For example, in one case, a Caribbean buyer continued to place orders with a traditional supplier in the United Kingdom, despite the fact that much better prices could be obtained from a North American source. Also, high costs may be due to import taxes.

Table 8-6. *Examples of Average Prices of Newsprint, 1984*
(dollars per metric ton)

Destination[a]	*Price*
Jamaica	532
Dominican Republic	356
Barbados	417
Windward and Leeward islands	566
Central America	483
United Kingdom	435
United States	450

a. Exported from North America.
Source: Canadian Organization for Development through Education data.

The market for printing and writing paper is much more fragmented than the market for newsprint. Manipulation of the market seems less apt to occur. As with newsprint (but to a lesser extent), there is a significant amount of variation in price between one country and another (see table 8-7).

Unfortunately, disaggregated information is not available, but it must be assumed that the reasons for the price variations are similar to those given earlier: the size of individual orders, the lack of competitive bidding, and the imposition of tariffs. A wide array of printing and writing papers is available, however, and each paper has a corresponding price. Sources of data often do not distinguish one quality and grade of printing and writing paper from another. Hence with the

Table 8-7. *Examples of Average Prices of Printing and Writing Paper, 1984*
(dollars per metric ton)

Destination[a]	*Price*
Jamaica	794
Dominican Republic	719
Barbados	800
Windward and Leeward islands	732
Central America	1,023
United Kingdom	400
United States	672–832

a. Exported from North America.
Source: Canadian Organization for Development through Education data.

information on hand, it is impossible to explain the price differences fully.

Despite industry statements, it must be concluded that the price paid for cultural paper depends on three factors:

- The negotiating ability of the buyer
- The size of the current inventory held by the supplier
- The volume of the order.

Paper is one commodity for which price is very dependent on volume. For example, as a relative measure, if the wholesale price is set at 100 units, a minimum bulk order of, say, 18 metric tons may cost 105 units; an order of 4 or 5 metric tons may cost 150–160 units; whereas a carton may cost 200–300 units.

Paper Marketing

Paper products are marketed in a number of ways. The most important channels are paper manufacturers, company representatives or agents, brokers, and importers.

Although it cannot be proven, there is evidence to suggest that some paper manufacturers have introduced marketing territories whereby one mill has influence in a given country while a competitor assumes responsibility for a neighboring country. Some buyers therefore find it difficult to obtain comparative quotations from a variety of suppliers. For example, it is known that a North American supplier brought pressure to bear on a competitor to withdraw from a tendering process in a Caribbean country—the implication being that the previously agreed-to marketing jurisdictions would be threatened. Although it might be suspected, there is no concrete evidence that the lack of competition has caused excessively high prices. Because markets are small in the developing world, the existence of selling territories may be an efficient allocation of resources for the suppliers and may have a neutral effect on the buyers.

Given the limited demand in the developing world, some producers (particularly those of North American origin) have not been greatly interested in developing offshore markets. The United States is a net importer of cultural paper and has been more concerned with the domestic market. In Canada, 70–75 percent of newsprint is dispatched to a steady and guaranteed outlet in the United States.

As a rule of thumb, most manufacturers will not quote on (let alone supply) orders below a minimum of about 18–20 metric tons. Generally, provided an order is of reasonable volume, the best prices are available directly from the mills.

Some of the larger mills appoint local company representatives or hire their own staff to sell paper products. Given the likelihood of regional pricing, local quotations are often equal to or better than prices quoted from the parent company in, for example, North America or Europe.

Paper brokers can be found throughout the world. They receive orders and then identify a source of supply. Brokers' prices are often relatively good because they have access to many sources.

Many businesses are established simply to import goods and, in many aspects, act as brokers. But importers are often linked to only one or two sources of supply. On the one hand, importers include a significant profit margin in their prices; on the other hand, they are nearby should problems arise, and they usually have a stock of paper available at short notice.

Tapping International Sources of Paper

The situation can be summarized as follows:

- Future paper production will continue to be concentrated in a few countries and to be dominated by several large companies, mostly in Europe, North America, and Japan. Globally, in the short to medium term, there will be no shortage of cultural paper.
- Paper production and consumption are small in developing countries, and the short-term prospects for growth are modest.
- There is some potential for local paper making in specific locations, but for the most part, the developing world will continue to be dependent on supplies imported from North America and Europe.
- World prices for paper should remain fairly stable over the next few years. The customary price increase of 3 to 5 percent a year will continue, although competition for nontraditional markets may lower prices.
- Because of the limited demand, paper users in developing countries command little attention from the major suppliers.

With the above in mind, paper buyers in developing countries should concentrate in the short term on ways to tap more effectively and creatively the world stock of cultural paper.

Paper Donations

In addition to entering the marketplace, paper users in developing countries can try to secure free paper supplies from a variety of bilateral, multilateral, governmental, and nongovernmental agencies. It must be stressed, however, that a dependency on donations is extremely hazardous and may be debatable on ideolog-

ical grounds. More specifically, users in developing countries who depend on donations are at the mercy of the changing priorities of the granting agency. Rightly or wrongly, some development agencies believe that the private sector should be the driving force behind development. As such, funds which might have been available in the past are now likely to be used to encourage individual enterprise. Furthermore, although some social programs must be subsidized from the global bank account, more attention must be given to recovering costs wherever possible—whether through general taxation or through user fees. If beneficiaries are to gain (often materially) through their participation in a project, should they not also be expected to make some tangible contribution?

Most often, paper donations are made for specific projects—for example, for textbook production or for a literacy campaign. Rarely has there been an ongoing program specifically addressing the paper needs of the developing world. (The Paper Supply Programme, financed by the Canadian International Development Agency for many years to direct paper supplies to developing nations, is an exception.) Donations of paper have tended to be sporadic and have originated from within the bilateral and official government agencies of paper-producing countries (Canada, Norway, Sweden, U.S.S.R., and so forth). Multilateral agencies (for example, Unesco and the U.N. Children's Fund) have also been involved in sizable paper donations to developing countries. Finally, numerous nonprofit, nongovernmental agencies have, over the years, supported educational projects in the developing world by supplying small amounts of paper.

For some unknown reason, rarely have bilateral and multilateral donations of paper been considered (although there are support programs for other commodities such as food and iron ore); nor have they been used in the form of balance of payments support. Some donor agencies are attempting to link aid with trade. As such, several new programs are offered whereby loan guarantees are extended to suppliers of home-produced commodities in order to encourage exports.

In summary, paper donations are available from a variety of agencies and under a range of terms and conditions (loans, grants, and so forth). But one must be cautious about adopting a false sense of economy when tapping philanthropic contributions. Ultimately, more thought must be given to making most paper-using projects self-sustaining and self-supporting. Donor support is neither infinite nor eternal.

Paper Purchases

The other major source of paper supply is through outright purchases—whether locally or in the international marketplace. When paper consumers in developing countries enter the paper-buying arena, their primary goal is to obtain the best possible product for the lowest possible price. The attainment of this goal is confounded by the following realities:

- With notable exceptions, most paper orders from developing countries are too sporadic and too small to expect suppliers to offer competitive prices or to extend services such as credit.
- Paper users are seldom experienced with paper terminology and specifications. They do not know what options exist and simply accept the advice offered by suppliers and printers.

Generally, paper users in the developing world lack the necessary purchasing power and influence to become legitimate buyers rather than simply "takers." To help overcome such constraints, potential paper buyers might consider the following three points of guidance.

First, as discussed, paper prices are very responsive to volume. The best prices are usually quoted by the manufacturers, but only on an order of 18–20 metric tons or more. Therefore, cost savings can be realized if annual needs are ordered at one time or if orders from several smaller users can be consolidated into one.

Second, buyers should request quotations from at least three suppliers. Potential suppliers can be identified by consulting a number of published directories. (The most common list of North American suppliers is the Lockwood Directory, available from Vance Publishing, 122 E. 42d Street, New York, New York 10168.) Tender instructions should specify clearly not only the type of paper required but also who is to be responsible for shipping, freight, insurance, any overland transportation, and (if applicable) brokerage costs.

Third, consumers should become conversant with the common generic names for different grades of paper. Quite commonly, consumers order a higher quality and heavier weight paper than is necessary. Regardless of the multitude of brand names and despite the selling features claimed by the various producers, printing papers are of the following basic grades:

- *Newsprint*. Newsprint is the lowest grade of uncoated printing paper. It tends to discolor over time when exposed to sunlight. It is the least expensive paper available.
- *Writing paper*. The most common types of writing papers are referred to as bond and duplicating paper. Bond is used primarily for writing. Often people will specify bond for a printing job when less expensive grades (for example, offset and tablet) would suffice. Duplicating paper has been specially treated to resist the penetration of ink from spirit and other duplicating equipment.

- *Book paper*. Book papers consist of those papers (except newsprint) used for practically everything which is read. Uncoated book paper is the most basic. Coated book papers have a clay coating which gives the stock a glossy appearance. Unless detailed color reproduction is required, coated papers are an unnecessary expense.
- *Cover stock*. Cover stock includes relatively stiff, heavyweight types of paper. Because the cost of cover stock can be as much as all the paper used inside the book, care must be taken to select the least expensive yet the most presentable. For most purposes, paperback-type cover stock (heavyweight, uncoated book paper) will suffice.

In summary, if costs are to be minimized, most printing jobs in developing countries can be satisfactorily done with one or more of the following: newsprint, uncoated book paper, duplicating paper, and uncoated cover stock.

Paper users should not be overwhelmed by the ways in which cultural papers are described. An important yet confusing concept is that of basis weight, the weight in pounds of a ream (500 sheets) of paper cut to a given standard size for that particular grade. The metric equivalent to basis weight is grammage and is measured in grams per square meter (gsm). Grammage is a much simpler and more useful concept. Measurements in gsm allow for a comparison of basis weights of any grade of paper because they refer to the same unit area. Tables are available to convert basis weights to grammage.

To ensure both the availability of supplies and the best possible prices, industry standards for sheeted stock should be used wherever possible.

Paper can be supplied in rolls or as flat or sheeted stock. Cost savings of 10 to 15 percent can be realized if rolled stock is purchased. Although the cost of sheeting must be accounted for, there is no reason to pay for sheeting costs in foreign exchange. If presses cannot accommodate rolls, then one should investigate the possibility of ordering rolls and sheeting it locally.

If presses will not accommodate rolled stock and if sheeting facilities are not available, flat stock will have to be ordered. Again, as a cost-saving measure, better prices are usually available if the dimensions of the required paper are consistent with industry standards. Specialty cutting to odd sizes adds to the cost. Industry standards for sheeted stock are (sizes in inches):

Newsprint	24 × 36	
Duplicating	8.5 × 11	8.5 × 14
	17 × 22	17 × 28
Uncoated book	23 × 35	
(Offset)	25 × 38	38 × 40
Cover stock	20 × 26	26 × 40

Book designers should consider not only the aesthetics of the publication but also the mechanical requirements of the press. If the printed material is compatible with the printing equipment and with commonly available paper dimensions, the cost will be reduced.

Most first-time buyers in the international market will be expected to pay in advance. Many suppliers in Europe and North America are reluctant to extend credit to new clients. In the past, many suppliers have shipped goods and have never been paid. To encourage suppliers to extend credit (and hence save money), however, some consuming organizations have prepared a short profile which includes financial records and letters of endorsement from a bank or other major supplier. After a relationship has been established between buyers and sellers, some form of credit should be expected. In most cases, credit will be extended for thirty days. For larger and more regular buyers, terms of forty-five and even sixty days can be negotiated.

When ordering sheeted stock, many consumers in developing countries specify that their supplies are to be ream-wrapped and boxed. Although ream wrapping may provide additional protection against damage and may make inventory control easier, it also adds to the cost. Extra time (and hence cost) is incurred in individually wrapping and boxing and in unwrapping and unboxing paper. A less expensive alternative may be ream marking, in which sheets of paper are stacked several reams high and a colored mark is inserted at each interval of 500 sheets.

Customarily, damage to international paper shipments should not exceed 3 to 5 percent, although larger losses are not uncommon. To avoid the inconvenience and the unnecessary cost of damaged paper, some attention should be given to packaging and insurance coverage.

Paper can be sent in containers (full or part) or by break-bulk. When shipping by break-bulk, extra care must be taken in packaging. Supplies should be shrink-wrapped in heavy-gauge plastic, stacked on wooden skids, and then plastic-wrapped again. A piece of wood should be placed on the top—with metal or wooden strapping applied to the sides to give added strength and protection. Wood or heavy cardboard corner pieces should also be attached.

Several types of insurance are available for paper shipments. Despite the added cost, the only policy that should be considered is one which contains an all-risk clause. Most other types of policy provide very limited coverage.

All insurance policies are subject to a deductible. For most paper products, the deductible is 1 percent, but because newsprint is more susceptible to damage, the standard deductible for it is 3 percent. For the same reason, the premium on a policy covering newsprint is also slightly higher than that for other types of paper.

International shipping costs vary enormously. As might

be expected, the larger the volume shipped, the lower the per unit cost. Charter rates are the lowest of all, but in order to qualify, between 5,000 and 12,000 metric tons must be shipped per vessel. Part-charter or parcel shipments are slightly more expensive but also require a minimum volume of between 1,000 and 3,000 metric tons. Break-bulk shipments are somewhat more expensive than charters or parcels but usually less expensive than containerized shipping. In sum, volume has a significant bearing on per unit and total costs and offers an additional reason to consolidate orders.

Shipping costs will also depend on whether the vessel is a conference carrier. Conference carriers are shipping companies which join together to fix prices and to record a common tariff which all participating members must follow. Conference carrier prices are often relatively expensive but are negotiable pending approval by a majority of the participating member companies. Nonconference carriers can set their own rates and need not consult with other companies. The flexibility in price of nonconference carriers can work both against and for buyers.

Improper documentation has caused considerable delay in many paper shipments. If customs and excise authorities have not received all the required documents at the port, buyers can experience many unanticipated and costly surprises. In most ports, goods can be left with the authorities for seven to fourteen days without incurring any storage charges. After the grace period, demurrage costs begin to accumulate. Cumulative demurrage charges can be so high that they exceed the value of the paper shipment.

Obviously, when paper stocks arrive, they must be carefully stored to minimize damage and changes in the paper characteristics resulting from high temperature and humidity. Preventative measures are straightforward. Storage facilities must be clean, well ventilated, and above all dry. Supplies must be tightly stacked on a secure foundation. Most suppliers wrap their paper (whether rolls or sheeted stock) in a moisture-proof covering. Where relative humidity levels exceed 45 to 50 percent, the moisture barrier must be left intact until the paper is going to be used. Any damage to the wrapping should be repaired.

With little effort and cost, ideal storage conditions can be easily created in which printing and writing paper will remain in good condition for many years. Provided newsprint can also be protected from exposure to light, it too can be stored without problem for a considerable period of time, although it will deteriorate more quickly than printing and writing papers.

In summary, although many nations may aspire to having their own pulp and paper industry, for a considerable time in the future, most supplies will originate offshore. Apart from receiving periodic donations of paper, most consumers in the developing world will depend on the international market to acquire their paper. A better awareness of the paper industry plus a few simple and practical steps should guarantee a steady and low-cost supply. Immediate savings can be realized on purchases if orders from individual small buyers are consolidated, if the variety of paper grades and types is simplified, if rolled rather than sheeted stocks are bought, and if competitive bids are solicited, particularly from brokers or mills.

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Part III

Provision of Textbooks: Developed Systems and Infant Industries

The six chapters in this part illustrate how several nations at various stages of development have dealt with the many policy issues and technical problems discussed in the previous chapters. The chapters demonstrate that each nation must judge its options in terms of its own particular circumstances because there is no universally best resolution to any of the issues or problems; that errors of policy or administrative mismanagement at any of the decision points discussed earlier can create serious problems for the entire operation to provide textbooks precisely because all the points are part of a total system; and that in spite of difficulties and mistakes there have been significant accomplishments in the provision of textbooks. Perhaps most important, all the cases discussed in this part show significant institutional learning. Policy errors or technical mistakes made at one stage are corrected at a later stage. Whether establishing or improving the provision of textbooks, one is dealing with necessarily imperfect human systems. The most that one can hope is that nations (and the international agencies which assist them) learn from their mistakes and from others' experiences.

The first three chapters in this part deal principally with macroeconomic policy choices, particularly the question of whether the private or public sector should be preferred. They demonstrate how a nation's history and culture, stage of educational development, and broad educational policy decisions form a constraining environment for the provision of textbooks.

In chapter 9, Peter Neumann compares the provision of textbooks in four highly industrialized market economies. These rich nations are able to afford a relatively lavish quantity and quality of textbooks and other learning materials, and all rely on the private sector for textbook supplies. But their policies and administrative arrangements are quite different, reflecting the unique traditions of each nation.

The experiences of these nations also show that, although the policy issues discussed throughout this book are particularly present in poor nations, they are not unique to them. An increase in national wealth through development may make it easier to deal with many of the issues, but it will not make them disappear. And, as Tyson-Bernstein's analysis of the U.S. experience in chapter 6 clearly demonstrates, even a very high national income is no guarantee against bad policy choices regarding textbooks.

India faces awesome difficulties in developing a satisfactory textbook publishing system. It is one of the poorest and most populous nations in the developing world, with a very large number of languages and dialects and a history of strong regional, language-group, and religious tensions. In chapter 10, Narendra Kumar chronicles the development of textbook publishing—

mainly by the public sector—in the postcolonial epoch. His discussion of the constraints that this heavy reliance on the public sector has placed on private publishing is a good illustration of the argument for the blending of public and private activity made by Gopinathan in chapter 5. Clearly, the appropriate public-private balance to service effectively this vast market for textbooks has still to be worked out. It is significant that because of the size of the nation, its private textbook publishing industry has developed a capacity—even under its constrained situation—to export books to neighboring nations.

Mexico is one of the most successful examples among developing nations of the blending of public and private activity to provide textbooks. In chapter 11, Peter Neumann and Maureen Cunningham give an account of the development of this unique and successful system. Their chapter is a summary of a World Bank Staff Working Paper. The Mexican experience is very instructive, and interested readers should acquire the original detailed discussion, which is available from the World Bank and the distributors of its publications around the world (see the reference list at the end of their chapter).

The remaining three chapters in this part are detailed accounts of the step-by-step development and operation of systems to provide textbooks in three quite different settings. The chapters demonstrate how all the problems and decision points discussed in part II have been dealt with in a variety of countries: the Philippines, a large, populous, multi-island nation with a relatively developed educational system and a long history of textbook use; Lesotho, a small, very poor nation that only recently became independent and has a less developed educational system and little history of textbook use; and the very small but educationally advanced island nations of the English-speaking Caribbean. The chapters present three quite different models for the relatively successful provision of textbooks, each adapted to the special circumstances in which it was developed.

Publishing for Schools in France, the Federal Republic of Germany, the United Kingdom, and the United States

Peter H. Neumann

Publishing for schools depends for direction on the educational establishment and relies in whole or in part on public funding. In the Federal Republic of Germany, France, the United Kingdom, and the United States, it is done by private companies and governed by a necessary but tangled web of laws, regulations, and customs. Under favorable conditions, the diverse interest groups that support, produce, and use textbooks work for a commmon purpose. A system of checks and balances ensures that schools receive an adequate supply of instructional materials and that these materials perform their assigned tasks. In times of social or economic stress, the issues that need to be resolved among government, teachers, parents, the general public, and publishers tend to lead to confrontations that put the system in jeopardy.

Government and private institutions form an essential part of the process of publishing for schools. In the industrial nations, the relation between them has developed over a long time. They have created a network that is not perfect but has managed to supply schools with a variety of educational materials at a public expense of 1 percent or less of national budgets for education.

It is important for officials and others responsible for providing textbooks in developing nations to be aware of the complex socioeconomic systems required to initiate and sustain the process of publishing for schools. The conditions for evolving similar systems exist in most developing nations. Professional expertise is required, however, to choose from among the many economic alternatives. At present, governments in the developing nations, unaware of the alternatives, either attempt to undertake the full burden of producing and supplying textbooks for their schools or offer the schools little support and financial aid for textbook purchases. Most school systems in the developing world therefore are faced with scarce supplies of often poorly conceived materials.

This chapter outlines those practices and procedures of governments, educational authorities, the general public, and educational publishers that influence and control the supply of textbooks to students in primary and secondary schools of France, Germany, the United Kingdom, and the United States. My sources were government reports and statistics, information available from publishers' organizations, and information from interviews. My analysis is based on first-hand experience with publishing for schools in these and other industrial nations, as well as in Asia, Latin America, and parts of Africa.

In France, Germany, the United Kingdom, and the United States, as in most Western nations, textbooks traditionally are produced by private publishing companies. They are purchased, however, by public agencies and paid for out of public funds. Dependence on public funds, together with the often highly charged political atmosphere that surrounds public education, creates unique characteristics in the school textbook industries of these countries and of others that follow the same pattern. Textbook publishing everywhere is contained in a complex triangle of laws, regulations, and customs which are applied to the selection, content, purchase, and pricing of textbooks.

Among the questions asked in preparation for the writing of this chapter were:

- What are the basic systems of education and general policies for providing textbooks?
- Are textbooks currently the main tools for teaching

and learning, or are they being displaced by newer media?

- To what extent do textbooks reflect a national curriculum, the input of special-interest groups, or the pressures of politics?
- Who approves the content of textbooks? How are they selected? Who pays for them?
- What is the role of the school textbook industry? How free is the competition? How good are the textbooks?
- What are the links and areas of cooperation between textbook publishers of developed and developing nations?

What are the basic systems of education and general policies for providing textbooks? The countries surveyed offer kindergarten plus twelve years of public education, subdivided into primary school, middle school, and high school. Various types of education can be chosen, such as a combination of general education and technical-vocational preparation or of general education and a more academic preparation for those going on to college. Except in France and in certain German states (*Lander*), textbooks are supplied on loan and free of charge to all students in public schools. France does not supply free textbooks to students in high school (*lycée*), whereas some *Lander* combine free textbooks with payments, at certain levels, from parents.

Are textbooks currently the main tools of teaching and learning, or are they being displaced by newer media? The answer is unanimous. It was well expressed by the national minister of education in France in March 1985: "The book remains, in spite of the appearance of newer devices, the principal support of teaching." A wide-ranging survey entitled "Books in the Curriculum," recently carried out by a committee of educators in the United Kingdom, came to a similar conclusion: "The majority of teachers regard textbooks as the prime teaching aid which can play both a central and supplementary role." The study included field research and a survey of textbook usage in the United Kingdom and United States. Students in primary and secondary schools, it was found, spend on average 70–90 percent of their time with books. Home study depends on books. Books are among the most effective, and probably the most cost-effective, tools for teaching and learning.

Questioning the effectiveness of textbooks is not new. Twenty-five years ago, responsible educators in the United States pronounced the textbook dead, overtaken by teaching machines, programmed instruction, film loops, and audiocassettes. Teaching machines as then conceived are now dead, and those other media sound almost antiquated beside the computer and videocassette player. More and more use is made in schools of new media. They are expensive but very effective in certain areas of instruction.

To what extent do textbooks reflect a national curriculum, the input of special-interest groups, or the pressures of politics? Only one country in the group studied (France) has a national curriculum. In Germany, each of the eleven *Lander* has its own curriculum, with differences so great that moving from one to another may create problems for children attending school. In both France and Germany, textbooks must conform closely to the prescribed curriculum. In the United States, regional differences between curriculums, which are a state responsibility, rarely prevent textbooks from being accepted throughout the country by a majority of school systems. There is no national or state curriculum in primary or secondary school in the United Kingdom. Secondary school curriculums are determined by the types of examinations the students intend to take.

Special-interest groups and political pressure exert a considerable influence on the publication of textbooks. Publishers often find themselves in the middle of acrimonious debates between the political establishment and teachers, parents, and citizens (often united in single-issue organizations) about the goals and effectiveness of basic education. Consensus has become more difficult to achieve following the social, scientific, and technical revolutions of the last few decades. Organizations and individuals concerned with many causes—civil rights, women's rights, the rights of minorities, religious revival, East-West confrontations, the new biology, population control, the aspirations of new nations, satellite communication—all clamor to be fairly represented in textbooks. The pressures result from a conviction, not readily supported by the facts, that textbooks are one of the most powerful tools for forming the minds of the young. The truth may be less dramatic: textbooks mirror the values currently acceptable to society and document the changes that occur. Textbook publishers, too, are neither the heroes nor the villains they are made out to be. They view themselves as an industry that serves the educational establishment, that will produce on demand what is considered acceptable by the majority of school systems.

Who approves the content of textbooks? How are they selected? Who pays for them? In only one country in the group, Germany, are textbooks required to be submitted for approval before publication. Once approved by the ministry of education of a state, the books then become part of an approved listing from which schools in that state may make their individual selections. But the same textbooks are rarely adopted by any other of the eleven states.

In France and the United Kingdom, schools and individual teachers traditionally have the right to make their own selections from publishers' lists without prior approval by a ministry. In the United States, so-called adoption states select and approve a limited number of

textbooks and basal series from which schools in the state must make their selection. So-called open states have a system similar to that of the British—namely, each school district or individual school makes its own unrestricted choice from publishers' lists. The process of textbook selection in the nations surveyed varies from formal evaluation of state adoptions (with hearings that may be open to the public) to simple decisions of a local textbook committee or teacher.

Textbook purchases are mostly financed from taxes raised by the local community. These taxes are augmented by state (or provincial) funds, which may be used to subsidize the poorer communities in the state. The central government is seldom a major source of funds for textbooks. A consequence of local and state funding is a discrepancy—based on variations in local wealth and commitment to education—between the funds available for textbooks in different parts of the same country.

What is the role of the school textbook industry? How free is the competition? How good are the textbooks? Textbook publishing is an important branch of any national publishing industry. In the early stages of a country's development, the opportunity to publish textbooks for schools may be an essential element in creating a national publishing industry. Because it is tied to public education, the market for textbooks is more predictable than the market for general books. This, however, does not necessarily mean that it is stable. Nor is it without risk for the individual publisher. More than in other mature industries, leadership among competing textbook publishers can shift dramatically from one adoption period to the next. Changes in school enrollments from baby boom to zero growth to actual decline affect the textbook publisher. Worse, textbooks, unlike teachers, have neither a union nor a unified constituency that will lobby the legislature on their behalf. In times of economic recession and tight budgets, textbook purchases are often the first to feel the pinch. Simply using available textbooks, even though they may be outdated or worn, is tempting for school administrators faced with rising teachers' salaries and costs of maintaining their plant. In all the countries surveyed, allocations for textbooks as a percentage of the national budget for education have recently declined—in some instances by more than 50 percent.

Textbook publishers learn to live with such changing fortunes. Large publishers continue their heavy investments in major series; smaller ones find their niche in regional publications or supplementary materials. The school textbook industry differs from general publishing and professional publishing in that it depends less on outside authors and more on its own in-house competence for the development of materials. Modern textbooks are complex teaching tools. They require a team of contributors with differing abilities and backgrounds. Complex formats and designs, profuse illustrations, and eye-catching layouts demand specialist services. "Impossible" schedules made necessary by changes in curriculum, deadlines for statewide adoptions, and basic shifts in teaching strategies call for such tight control by the publisher that outside authors, mostly teachers or researchers, find it difficult to comply.

Textbook publishers are not printers and, unlike newspapers, usually do not own printing plants. They are responsible for the editorial development of educational materials, design and illustration (often procured from outside sources), warehousing, shipping, and billing, and the marketing and promotion of their materials. The range and the quality of textbook materials (together with their audiovisual and software supplements) are impressive in countries with developed textbook industries. Nevertheless, justified criticisms remain, and there is no easy answer to the question, "How good are the textbooks?" Under favorable conditions, implying consensus of what educators expect and what administrators are willing to pay for, textbook publishers should have few problems creating materials responsive to the educational system. In the real world, however, it is often necessary to compromise.

In most developed nations, including those surveyed for this chapter, an uneasy balance, but a balance nonetheless, prevails most of the time between the various interest groups that govern textbook production, selection, and purchase. Customs and traditions, supported by laws and regulations, change relatively slowly; adjustments to curriculums are incremental; and the range of materials combined with freedom of choice for teachers and schools have provided a measure of stability.

Although textbooks continue to be the main support for teaching and learning, their purchase with public funds has seriously declined over the past decades. But funding has not been reduced because—as some may suspect—money has been spent on computers, video, and other new media. Rather, the causes of the reduction are economic recessions, pressures on educational budgets from larger salaries for teachers, and the oil crisis, which spawned inflation and higher costs for plant maintenance. Perhaps, with the reduction of inflation and the economic recovery that seem under way, the pendulum will once more swing toward more reasonable levels of public expenditure for educational materials. If this happens and consensus similarly emerges on the role and content of public education, it seems likely that a highly developed and professional publishing industry will produce even more effective materials.

What are the links and areas of cooperation between textbook publishers of developed and developing nations? Publishing for schools is clearly the most politically sensitive area of educational publishing—an area where it is instinctively felt that each country should

develop its own unique materials. Yet paradoxically, the publishing of school textbooks is more derivative than most other types of publishing because each successive textbook or series builds upon previously published materials, while radical departures in curriculum result in new materials that are quickly plagiarized. In fact, the exchange of rights, adaptations and translations, cooperative editions, and more or less outright imitations have long been common. This happens most frequently with mathematics and science and with dictionaries, school atlases, foreign language materials, and the like. The necessary conditions for effective cooperation and for adapting materials to different cultures and school systems are professional competence and knowledge of the required process.

In the developing nations, lack of appreciation of the advantages inherent in using tested methods and materials to create textbooks, combined with a lack of local publishing skills to contribute to the process, have stymied the growth of national textbook resources. Exceptions have resulted from the involvement of British publishers with textbook publishing in English-speaking Africa and of French publishers in French-speaking Africa, where existing relations have formed the basis of ongoing cooperation. American publishers have worked more actively with the emerging publishing industries of Latin America. Nevertheless, publishers and governments responsible for providing textbooks need a much better understanding of the opportunities and responsibilities that are part of such cooperative efforts.

Germany

Basic Educational System

In Germany, education is the responsibility of the *Bundeslander* (individual states). The eleven *Lander* have a combined total of 10.4 million students in 33,000 primary and secondary schools supported by 585,000 teachers.

The traditional educational system in most German states consists of four years of comprehensive primary school, followed by an examination leading to a choice of secondary education: five years of *Hauptschule* (middle school), six years of *Realschule* (vocational high school), nine years of *Gymnasium* (classical high school), or six to nine years in *Gesamtschule* (comprehensive high school).

Curriculum

Curriculums are determined by the ministries of education of the eleven states quite independently of one another. Curriculum development is a continuous process. Revisions are introduced annually by various committees within each state. Sometimes new curriculums are used experimentally and are subject to further revision after more extensive classroom testing. According to a chart published by the Institut fur Bildungsmedien, between 257 and 320 new syllabuses were introduced nationwide each year from 1979 to 1984.

A new textbook may be developed by a publisher for a number of reasons; nowadays it is generally the result of a sweeping curriculum change introduced by one of the ministries of education. Political concerns are likely to exert considerable influence on the content of textbooks, especially in the social sciences and geography. It is not unusual, after state elections, for a change of the ruling political party to be followed by curriculum changes in these and in other subject areas. Because education in Germany is a jealously guarded prerogative of the individual states, there is no national curriculum. Each state demands its own version of state-approved textbooks. School curriculums may vary so much from state to state that a student moving from one state to another could be set back by as much as one year.

Approval and Selection of Textbooks

With few exceptions such as dictionaries, all schoolbooks have to be submitted for approval before publication—that is, before they may be offered for sale to schools. Because each state reserves to itself this right of approval, it becomes necessary to submit textbooks in each subject and grade level to all eleven state ministries of education. Because curriculums vary considerably from state to state, chances are small that the same text will be approved in more than one; thus publishers are forced to produce regional editions, which often serve fairly small markets and thus have additional costs and uncertainties.

To obtain official approval from a state ministry of education, the publisher has to submit the finished printed and bound book (or series of books at the primary school level) to a review commission appointed by the ministry and composed mostly of educators. These commissions usually take an average of several months to decide whether to approve a textbook that has been submitted.

A book or series may be approved without change by a review commission; it may be approved for use during a limited time only—for example, two years; changes, additions, or deletions may be proposed as a condition of approval; or the book may be rejected. Major criteria for evaluation of a text are:

- How well it agrees with the curriculum
- Its use of approved didactic, pedagogic, and scientific findings and methodology

- Its appearance—quality of presentation and readability
- Its price.

Once schoolbooks have obtained official approval, they may be selected and purchased by individual schools under the so-called free textbook schemes (*Lernmittelfreiheit*), which vary significantly from state to state.

Provision of Textbooks

The various German states operate their textbook systems in different ways, which include:

- Lending systems under which the state pays for the books selected by the teachers; the books are then loaned free of charge to the students
- Lending systems combined with book purchase by parents; the state pays for a certain percentage of schoolbook supplies, and the parents pay for those books that are required but not supplied by the state
- Subsidy systems which provide financial support for buying schoolbooks for children from low-income families
- No state support for schoolbook purchases except for those parents on welfare programs.

Expenditures for school buildings and maintenance, as well as textbook purchases, are financed by state taxes. This causes significant differences in the amounts allocated per student for textbooks, depending on state policy and wealth. Teachers' salaries, by contrast, appear to be similar throughout Germany.

Textbook Budget

Exact figures for schoolbook purchases in Germany are difficult to find and may not exist. The available figures for some states are estimates. Comparisons between states on per-student expenditure are further distorted because of the varying amounts that parents contribute to textbook purchases. In 1984, a combined total of approximately DM78 billion was spent on education by the federal government and the states. This included about DM400 million (or 0.0051 percent) for textbook provisioning for some 10.6 million students (or an average of DM37.74 per student per year). The national average of DM37.74 per student spent on textbooks reflected a low of DM11.50 and DM12.64 in two of the states, between DM23.19 and DM40.13 in five of the states, and a high between DM42.57 and DM86.64 in the four remaining states.

Educational Publishing Industry

Seventy-two textbook publishers account for 98 percent of textbook sales. Total sales of all schoolbook publishers for 1985 were estimated at DM360 million. As table 9-1 shows, total sales of textbooks and expenditures for textbooks per student have declined significantly since reaching a high in 1981. Most publishers publish books in all the subjects taught in the 100 different school systems throughout the eleven *Lander*.

Of necessity, these publishers serve a fractured market. City-states such as Bremen, Hamburg, and Berlin each have fewer than 300,000 students enrolled in their school systems but are spending more money per student on textbooks than the larger states, which have enrollments ranging from 1.33 million to 2.99 million.

Since 1980, the publishing industry has been faced with both declining enrollments and more and more insistence by individual states that textbooks closely reflect their own unique views on education and the curriculum. The recent economic recession has resulted in deep cuts in state budgets for textbooks, compensated for insufficiently by a greater expenditure on schoolbooks by parents.

Table 9-1. *The Schoolbook Market in Germany*

Year	Number of schoolbook publishers[a]	School enrollments (millions)[b]	Newly introduced curriculums[c]	Total sales of schoolbook publishers (millions of deutschmark)[d]	Average expenditures per pupil (deutschmark)
1956	56	8.0	—	100	12.50
1969	70	10.1	—	380	37.62
1979	81	12.0	306	500	41.67
1981	84	11.5	320	520	45.21
1982	80	11.1	257	470	42.34
1983	75	10.9	219	420	38.53
1984	74	10.6	302	380	35.84
1985	72	10.4	—	360	34.61

—Not available.
a. According to information from the Association of Schoolbook Publishers (Des Verbandes der Schulbuchverlage).
b. From statistical yearbooks.
c. Data available since 1978.
d. Estimates.

In spite of these difficulties, the schoolbook market in Germany offers a wide selection of educational materials produced in competition by individual publishers. New textbooks are generally produced in response to the demands of the *Lander*. Many titles are printed in relatively small editions. Nevertheless, the situation has been called drastic by its critics. States' rights and the resultant divergencies in the goals of education, the required approval of textbooks by each state, and the politicization of the educational process are issues that have all come under more and more scrutiny by the press and the public. And obviously the same issues have complicated the task of publishers and of their authors, increasing the cost of textbooks—in extreme cases by as much as 100 percent. In spite of criticisms, sources in the publishing industry maintain that schoolbooks are a bargain compared with the average list price of all other books in German bookstores (Institut für Bildungsmedien 1985).

Books are the main teaching aid in German schools and are likely to remain so for the foreseeable future. Other media, however, are likely to play a more and more important part and to affect turnover for the publisher.

Book Exports and Linkages to the Developing World

At advanced levels in the sciences, mathematics, and technology, books are increasingly published in English for the world market by such German publishers as Springer Verlag. By contrast (and with the exception of books on "German as a Foreign Language"), schoolbooks published in German are seldom exported.

Nevertheless, a number of German publishers and printers have established joint ventures abroad, some in developing countries. One of the most prominent German international publishers is the Verlagsgruppe Bertelsmann (Bertelsmann Publishing Group), with joint-venture book clubs in Latin America, Spain, Portugal, and the United Kingdom and with branches in other countries.

Modest support from certain organizations and from the federal government is available to encourage cooperative efforts between German publishers or printers and those from the developing world—for example, to train technicians and to translate materials. German industry is a further source of technical publications and training manuals.

France

Basic Educational System

Education in France is a responsibility of the central government exercised by the national minister of education. Thirty-six thousand municipal divisions make up the basic units of the system. In 1984–85, total enrollment in primary and secondary schools was 12.84 million students. More than 10 million of these students were in public schools, and the remaining 2.18 million attended private schools. Preprimary and first-level students numbered 6.98 million, and second-level students, 5.52 million. School is compulsory to the age of 16. In 1984–85 the school system employed a staff of 904,483—739,867 (81.8 percent) in teaching positions and the rest in administration.

The educational system consists of five years of primary school, followed by four years of middle school (*collège*) and three years of high school (*lycée*). During middle school, students have the option, after three years, of taking an examination to transfer to a professional *lycée* (*lycée d'enseignement professionnel*, or LEP) for an additional three years. This prepares them for the *certificat d'aptitude professionnelle* (CAP). Students going on to the *lycées* graduate with a *baccalauréat*.

Curriculum

The national curriculum for primary and secondary education is uniform throughout the country and applies equally to public and private schools. It tends to be so detailed and prescriptive that, in subjects such as science and mathematics, not only is the content prescribed but also the approach to teaching it.

Approval and Selection of Textbooks

Textbooks are not approved before publication. Publishers are free to publish whatever they like at their discretion. Major criteria for selecting a textbook are:

- How well it fits the curriculum and needs of the student
- How suitable it is for teaching the average student
- The attractiveness of its design and illustrations
- The clarity with which it is presented
- The availability of a teachers' edition
- Its price.

A fundamental principle in France has long been the right of each district or municipal division to select the textbooks for its school system. In very small communities, individual teachers may make the selection.

Provision of Textbooks

As a general rule, books for elementary schools are bought by municipalities with public funds and are loaned free to students. In 1977 the national government proposed to provide funds for a textbook loan program for students at intermediate or middle school (*collège*). But

funding for this program has been sharply reduced. Parents who can afford to do so purchase required books for their children while poorer students may well have to manage with inadequate and out-dated books. Neither the national government nor municipalities supplies free textbooks at the high school level. Parents purchase prescribed books, spending between $40 and $60 per child a year.

At the preprimary and primary levels, municipalities fund the purchase of books out of local taxes. Amounts allocated per student may vary as much as 1:3 between wealthier and poorer communities. Teachers receive their salaries directly from the national ministry of education and therefore are not subject to such variations.

Textbook Budget

France spent F178 billion on education in 1984–85. Only about F100 million (or 0.00056 percent of this amount) was spent on textbooks. This is the lowest percentage of any of the countries surveyed for this chapter. It is only partially explained by the facts that free textbook loan programs in France are confined to primary education and that the contribution by the national government to textbook purchases for middle schools is inadequate. Indeed, there is a crisis of confidence between the ministry of education and French publishers in which the press and general public have become more and more involved. Publishers estimate that a minimum expenditure of F425 million (or 0.0025 percent of the national education budget) is required to fund adequately present book commitments, including textbooks for middle schools. If such a commitment is not possible under current budgetary restraints, publishers argue that the ministry should acknowledge that it can no longer fund textbooks for middle schools and place that burden back on the shoulders of parents.

Educational Publishing Industry

The educational sector represents 14 percent of the total sales of French publishers, a percentage that has been steadily declining. Each year about 4,000 textbook titles are newly published, revised, or reprinted, and 10,000 titles are currently in print. Fifty-five million books are produced annually. Ten publishing companies account for about 90 percent of textbook sales. These publishers tend to produce books for all levels of primary and secondary education. Textbook sales used to represent 70 percent of total business for some publishers; today they represent 20 percent.

Publishers closely follow the curriculum prescribed by the national ministry of education. New programs in mathematics, biology, economics, and contemporary history have been introduced over the last few decades. Publishers themselves do a considerable amount of in-house editing and commission authors to interpret and give form to the prescribed curriculum. Like textbooks in other countries, French textbooks have greatly improved in the use of color and illustrations and in other aspects of presentation.

Educational publishing in France has a number of unusual features. As elsewhere, publishers promote their materials by calling on schools and municipalities where the selections are made and by providing free copies and other promotional materials. Unlike other countries surveyed, however, where publishers sell either directly to school systems or via educational distributors, schools buy their books from local bookstores. There are some exceptions: Paris, for example, buys centrally from publishers, who ship the books directly to schools. On the one hand, purchasing books through the bookstore undoubtedly increases their cost to the school system. On the other hand, this practice supports the book trade, which in France sells textbooks to parents as well.

According to a 1982 survey, loaned books had on average ten-year-old copyrights (mathematics texts, average six years; French language texts, average sixteen years). Many of the books in schools are worn, tattered, and outdated in both content and appearance. The sorry state of the free textbook loan program has created a demand by parents for educational materials, which the publishing industry is meeting with innovative materials for home study. Parents purchase for their children not only prescribed textbooks to supplement those available in school but also a range of innovative materials to be used at home, including special programs for self-study during summer holidays.

Children at age thirteen are spending thirty-two hours a week in school plus ten hours of homework; yet parents are purchasing these additional materials for study on weekends and holidays. There is apparently a great deal of public unhappiness with the textbook situation in France, as evidenced by recent articles in the press. Education is becoming a political issue, in part because of a back-to-basics movement in education. There are more and more demands by the press and public that education, including textbooks, must be more adequately financed. Communication problems have existed for a long time between publishers and the government, and relations presently are tense.

The present paucity of government support for textbook purchase contrasts with the official position on the importance of textbooks. In March 1985, the national minister of education had this to say in an official address: "The book remains, in spite of the appearance of newer teaching methods, the principal support of teaching." Indeed, it seems evident that in France, as in the United Kingdom, the United States, Germany, and elsewhere, the textbook and teacher's manual remain irreplaceable.

Book Exports and Linkages to the Developing World

France maintains strong links to the developing world, especially French-speaking nations in Africa. As much as 20 percent of the sa. of educational materials are to these countries. French publishers prepare co-editions for French-speaking Africa and are engaged in joint publishing ventures. They are also active in the Arab world.

The United Kingdom

Basic Educational System

In the United Kingdom, the basic educational system consists of 121 Local Education Authorities (LEAs). The Department of Education and Science (DES) oversees the system in England, Wales, and Northern Ireland, and the Scottish Education Department oversees the system in Scotland. The central government exerts more and more control over expenditure on education. Nevertheless, decisions on spending are made by the LEAs. Decisions on curriculum content are the responsibility of individual schools, guided more and more by the LEAs.

Curriculum

There is no national curriculum at the primary level (5–11 years) or secondary level (11–18 years). The curriculum at secondary school is determined by the examination that the student intends to take, administered by one of the following examination boards:

- General Certificate of Examination Board: Ordinary Level (examined normally at 16 years of age) and Advanced Level (examined normally at 18 years of age)
- Fourteen Certificate of Secondary Education Boards (examined at 16 years of age)
- Scottish Certificate of Education
- Northern Ireland Examination Council.

Changes in curriculums and syllabuses take place continuously. Reports from teachers' associations and other organizations (for example, the Nuffield Foundation, the Schools Council, the LEAs, the School Curriculum Development Committee, and the DES) frequently lead to new secondary school examinations requiring new curriculums. For example, the Nuffield Foundation sponsored projects for teaching modern languages, science, and mathematics; the Schools Council and the Inner London Education Authority sponsored projects on science, mathematics, and other subjects.

Large-scale curriculum renewal and new teaching needs and methods—for example, individualized learning, resource-based learning, mixed-ability classes, and the wishes of some teachers to produce materials suited to their own particular circumstances—have led to the formation of teams of writers, often sponsored by a variety of organizations. Highly specialized materials and those of local flavor are often published by the organizations themselves. Textbook materials developed by large projects such as the Nuffield Foundation's are generally issued by a commercial publisher in conjunction with the sponsoring organization. An equitable system through which publishers may bid for such materials has been in operation for some time. Under this system, the selected publisher normally works with the sponsoring organization on the final design, layout, and format of the material—or may be invited at an early stage to participate in the editing of manuscripts. The publisher is responsible for providing the funds for the production, marketing, and distribution of the finished materials and pays a royalty on sales to the sponsoring organization.

Textbooks produced by curriculum development projects have had a profound effect on the teaching of particular subjects. Major sponsoring organizations such as the Nuffield Foundation spend much more on research and development of texts than a commercial publisher is able to spend without making its book or series prohibitively expensive.

Sponsoring organizations, under their contract with a selected publisher, usually retain the copyright to the publications produced. Retaining copyright enables the sponsoring organization to support the wider dissemination of their publications in the form of adaptations or even translations. Authors and publishers not involved with the original publications may be encouraged to publish revised versions that have benefited from classroom experience gained with the original materials. Designed to serve the average teacher and students (rather than an elite, as did the original publications), such "offspring" are likely to outsell the original materials by a wide margin. Lord Bullock, when he was chairman of the Schools Council, observed this phenomenon and referred to the Council's publications as "models to be plagiarized." The experience has been similar in the United States with curriculum development projects sponsored by the National Science Foundation.

Special-interest groups (for example, those concerned with the status of women or ethnic minorities) tend to lobby for better representation of their concerns in textbooks. Meetings between special-interest groups and publishers may result in new guidelines being produced, such as a recent report from the Educational Publishers Council entitled *Publishing for a Multi-cul-*

tural Society. Textbooks for both primary and secondary schools are developed by publishers working either with some of the organizations referred to above or with authors chosen by the publishers themselves.

Approval and Selection of Textbooks

Because there is no national curriculum, there is no national system of approving textbooks; nor is there any system of local approval. Each school selects its own textbooks. In secondary school, the head of a department (mathematics, science, and so on) is likely to be the most influential person. In a primary school, it will be the head teacher working with teachers who have responsibility for particular subjects. Teachers are free to choose, within their budgets, the material they think most appropriate.

Inspectors or advisers of the LEAS often have a strong influence on curriculum, and thus on the textbooks chosen for primary schools. At the secondary level, the examination syllabus chosen by the school influences the choice of textbooks.

Teachers have a variety of ways for selecting textbooks. They receive mailings and inspection copies from publishers and visits and presentations from publishers' representatives. They may attend regional or local textbook exhibits and workshops, read reviews in journals, or even participate in pilot projects that test textbooks in classrooms under controlled conditions.

The effectiveness of the selection process depends on the dedication of those involved. The burden of selecting the most appropriate textbook from the multitude of offerings may be eased for the less experienced teacher by the guidance provided by LEA inspectors or advisers, by the name recognition of a known author, by the imprint of a reputable publisher, or even by the selection of the text by a leading school in the area.

Provision of Textbooks

Traditionally books have been purchased by teachers from funds provided by the Local Education Authority, which each year establishes an amount to be spent per pupil on equipment, materials, and books. More and more as funds have become scarce, large sums of supplementary money are being provided by parents. Books are loaned to students for a period of time, reclaimed, and reused.

The central government provides a significant proportion of the money spent on local services through rate support grants. The balance is raised from local taxes and revenues. Allocation of these funds is a local responsibility.

Differences in school spending can be significant among local authorities, sometimes at a rate of 3:1. Such differences can apply to maintenance of buildings, to levels of teaching staff, and to books, but not to teachers' salaries, which are determined nationally. Authorities who spend little on books often spend little on services, but it can also be a matter of priorities at the local level.

Textbook Budget

As with a number of other countries, the United Kingdom's expenditure on education, including textbooks, has suffered considerable retrenchment over the last few years. There are no universally applied guidelines as to how much should be spent on books in schools. Historically, such expenditures have constituted less than 1 percent of total local authority expenditure on education.

Spending on books in 1983–84 reached the low average of £7.25 per student in primary school and £10.17 in secondary school. These figures may be compared with those recommended as reasonable by the National Book League for the same period: £11.22 for primary school students and £18.33 for secondary school students.

As reported by the Educational Publishers Council, which compiles detailed analyses of local authorities, some of the consequences of low expenditure on books are:

- Old, out-of-date books still being used
- Books in bad condition
- Children sharing even basic textbooks
- Books not available for homework
- Parents and parent-teacher associations (PTAS) being asked to provide money for books even though the 1944 Education Act requires local authorities to buy them.

The Educational Publishing Industry

In the United Kingdom, the development and production of educational books is based by tradition on the initiative, expertise, and investment of private enterprise in partnership with the educational establishment. It is supported by public funds raised at different levels of government, from central to local authorities. Because of cuts in public spending on textbooks over the last few years, funds contributed by parents have become important for book purchases.

Freedom of choice is a fundamental characteristic of British education: the teacher's right to choose and to buy the materials he or she wishes to use in the classroom, free from interference from state or local authorities. A tightly controlled system of prescribed books is potentially cheaper than a completely free one. But because less than 1 percent of what local authorities

spend on education is spent on books, it is debatable whether the savings from a prescriptive system would justify the resulting disadvantages. The present situation not only allows teachers to select their materials freely but also enables publishers to produce a great range and variety of materials.

The Educational Publishers Council (a division of the Publishers Association, which is composed primarily of firms that publish books for schools) names eighty members in its 1984 listing. These include six very large educational publishers and twenty significant ones. For 1983–84, the Educational Publishers Council estimated a total market for schoolbooks of £114.7 million, of which parents contributed £21.5 million (18.7 percent). Schoolbooks constituted 11 percent of the total British book market, valued at £900 million in 1983. In addition to schoolbooks, fiction accounted for 24 percent of the total market; scientific, technical, and medical books for 15 percent; reference works for 11 percent; academic and professional publications for 9 percent; and religion for 3 percent. This left a category called "other" with 27 percent of the market.

The educational book trade is complex. Of local authority spending on books in 1980, 11 percent was bought directly from publishers by local authority organizations, another 25 percent was handled by specialist contractors, and the remaining 64 percent was sold by bookshops. Trade with educational establishments, including public libraries, constitutes a high percentage of turnover for both booksellers and contractors.

The so-called Net Book Agreement, a system of price maintenance for certain categories of books, further complicates matters. Books priced under the Net Book Agreement may not be discounted by the bookseller or educational contractor to the final purchaser. There is no rule that determines whether books for schools should be published at net prices or at nonnet prices, which are only recommended rather than enforced list prices. Most publishers operate on the basis that schoolbooks are likely to be sold in quantity rather than in single copies and should therefore carry a recommended or nonnet price. This allows booksellers and contractors to offer discounts to schools.

A large educational publishing project (for example, a reading series) is usually tested by the publisher, often with the assistance of the authors, to ensure that it reflects the requirements of teachers and students. Test procedures may include pilot editions tried out in limited classroom settings, reviews of written materials by outside consultants, and classroom testing of teachers' editions and other supplementary materials. Publishers compete freely with each other over sales of their individual materials. They are generally cooperative and consultative within their association on matters of industry policy which concern national or local politics and legal matters such as copyright. They also cooperate on joint promotions such as exhibits and seminars, spending on books by the LEAs, and on new developments such as computer software, improved ordering and distribution procedures, and on other matters affecting the industry.

Books in the Curriculum, a wide-ranging 1985 survey funded by the Educational Publishers Council and carried out by a committee of educators, included field research in primary and secondary schools in five areas in Britain, as well as a substantial compilation of published evidence about book use in schools and reading education in the United Kingdom and the United States. The findings indicate that a majority of teachers regard the textbook as the prime teaching aid which can play both a central and supplementary role. Books, the survey notes, are widely used throughout the school day and provide satisfaction that other media cannot match.

Microcomputers in Schools

The government has been active in developing the use of microcomputers in schools. It has subsidized the purchase of hardware and is now subsidizing software. At first, the introduction of computer-aided instruction depended largely on local initiative and enthusiasm. Government subsidies applicable only to British-made equipment resulted in the use of three or four types of hardware, initially in secondary schools and more recently in primary schools. Although extensive use of computers in schools is complicated by problems of hardware compatibility, the relative lack of suitable educational software, and (for the present) the limited ability of many teachers to use the computer creatively, the educational market for computers is burgeoning. Software is being produced by individuals, by nonprofit organizations, by hardware manufacturers, and by publishers. Questions of copyright, of unauthorized copying of materials, and of plagiarism divide users and providers. For publishers, the market is presently very small compared with that for books.

Book Exports and Linkages to the Developing World

Historically, the United Kingdom has had a strong book export business—close to 50 percent of total sales of British publications. In 1984, exports were 44 percent (£400 million) of the total British book trade. The United States has become the largest British export market, accounting for 24 percent of sales, followed by the rest of Europe with 20 percent, Australia with 13 percent, South Africa with 8 percent, and Canada with 5 percent. Educational books enjoy strong export sales, especially throughout the Commonwealth. But British publishers

and their associate companies abroad do more than export books. In English-speaking Africa and the Caribbean, British publishers seek to assist in the development of new materials written by local authors for local needs.

The overseas development of new educational materials is typically achieved through contract publishing, an arrangement under which the British publisher or its local associate company makes its expertise in editorial development, design, and production available to the local government. The parent company generally oversees the manufacture of books when this can be achieved more economically outside the developing nation.

The Book Development Council (the International Division of the Publishers Association) is charged with ensuring adequate book provision around the world. The council works closely with national and international agencies both to achieve this aim and to promote the long experience British publishing companies have enjoyed in adapting their subject materials to the needs of individual countries. By offering fellowships and training programs in the United Kingdom, the Book Development Council assists with the establishment of indigenous publishing industries.

The United States

Basic Educational System

In the United States, education is the responsibility of the fifty states and the District of Columbia. The school district is the basic administrative unit. There are about 15,500 school districts. Total enrollment in the 1984–85 school year was 39.4 million students, with 23.8 million in elementary schools and 15.6 million in secondary schools. A total of 2.15 million teachers serve the school system—1.18 million in elementary schools and 961,000 in secondary schools; 1.47 million are women, and 676,000 are men.

The traditional system of education in most parts of the country is six years of elementary school (kindergarten, grades 1–5), three years of middle school or junior high school (grades 6–8), and four years of comprehensive high school (grades 9–12) or technical or vocational high school. A typical comprehensive high school offers a variety of courses for students to choose from according to their ability, preference, and future educational and career goals. Technical or vocational high schools are more prevalent in some parts of the country than in others and often serve a region rather than a single school district; they attract students who are planning to enter technical trades upon graduation.

Curriculum

Curriculum is a state responsibility. State prescriptions may be issued under a host of different names: "Proclamation of the State Board of Education" in Texas, "Curriculum Frameworks" in California, "Course of Study," and so on. As will be explained in the next section, some states (adoption states) seek to maintain strong central control over their school systems and over textbook selection; other states (open territories) leave textbook selection to the school districts. In spite of regional differences in curriculum, most textbooks and basal series are widely accepted by schools across the nation. Nationwide acceptance (and hence large print runs) makes possible the lavish design, illustrations, and use of color typical of U.S. textbooks.

State and local education boards tend to hold extensive public hearings before a proclamation defining bids for textbooks becomes official. Textbook publishers, on their own or through the offices of the Association of American Publishers (AAP), work closely with all professional organizations involved in education. Together with their authors, they try to anticipate emerging trends in education so that their textbooks do not become obsolete during the five to six years it takes to develop a textbook series.

Special-interest groups, as is well known, are both active and influential in the textbook development process in the United States. Reflecting changes in societal values, their input has radically transformed the content and appearance of U.S. textbooks over the last few decades. Publishers find themselves frequently caught between conflicting views, with extreme cases making national headlines. But despite grievances about the system, U.S. textbooks have been found acceptable by most teachers and by the general public.

There have been national curriculum development projects. The high point of these projects occurred in the early 1960s in response to the U.S.S.R.'s launch of Sputnik, the first artificial satellite. During this period, the federal government, largely through the National Science Foundation (NSF), sponsored a broad spectrum of projects (at various universities and research centers) to improve the teaching of science and mathematics.

Many of these projects assembled writing teams of leading subject-matter specialists from the universities and outstanding teachers from the nation's best schools. These teams produced materials for teaching the sciences and mathematics that were then published by commercial publishers selected by the NSF under a system of tenders and bids.

Known by their initials—SMSG in school mathematics, PSSC in physics, BSSC in biology, Chem Bond and Chem Study in chemistry—these groups had a profound influence. Their impact was based on their often

revolutionary approaches, the reputation of their contributors, and what has been called the halo effect of their sponsorship by the NSF. Furthermore, the use of their materials in the classroom was generally encouraged and supported by extensive teacher training through workshops sponsored by the NSF.

Although the impact of these projects on the national scene was profound (and indeed their influence has been felt and continues to be felt far beyond the shores of the United States), few of the original materials remain in the classroom. Even at their peak, actual classroom use was limited by the often uncompromising rigor of the subject matter, which made them accessible only to the better students at better schools. Eventually, many of the novel concepts and methods enshrined in SMSG, PSSC, and so on reached the average school system through the efforts of publishers who used the original materials, in Lord Bullock's phrase, as "models to be plagiarized." Commercial publishers and their authors benefited from the massive investments in research made by the NSF, which would have been quite beyond their own resources. Moreover, by observing where NSF materials failed in the classroom, they were able to make necessary revisions. They published adaptations that until recently dominated the market. Of late, a national trend toward a return to the basics has required extensive rethinking of some of the premises on which the NSF-type materials were based. Unlike its earlier method of operation, the NSF now intends to work more closely with publishers in the early stages of product development, recognizing that the publishers have a unique contribution to make to the teachability of classroom materials.

Approval and Selection of Textbooks

There is no system of official prepublication approval of textbooks in the United States. Publishers are free to publish whatever they wish. As mentioned earlier and described in chapter 6, two basic systems of textbook selection and adoption operate side by side in the United States: state adoption and the so-called open territories. Despite differences between systems, in both of them textbooks are selected by local school districts for use in local schools. Adoption states, of which there are currently twenty-two, limit the school districts' choice to a selection from an approved list adopted by the state.

Major considerations during the selection process are whether a text fits state curriculum frameworks, whether teachers find content and presentation of the materials suitable for their students, whether representation of women and minorities in the books is fair and equal, and whether teachers find the materials "teachable"—a judgment that includes a review of such ancillary materials as teachers' editions, workbooks, student guides, video, audio, or computer programs, games, and so on.

Historically, state adoptions began with strongly politicized state boards that tended to select a single series or textbook to be used by every school district in the state—so-called single adoption. Single adoption procedures invited corrupt practices and caused a great deal of dissatisfaction among teachers deprived of choice and among publishers seeking a more open system. Today, all twenty-two adoption states provide for multiple adoption lists. For example, Texas offers school districts a choice of as many as five basal series simultaneously in any one subject; California adopts from five to fifteen different series per subject and restricts state adoptions to elementary grades only. Other states fall somewhere between these two, but all offer more than a single choice.

Adoption states currently account for approximately 48 percent of total textbook sales; open territories, 52 percent. Some school districts rigidly control the choice of textbooks within their district; others leave such decisions to individual schools.

Whether textbook adoptions are decided at the state, district, or school level, textbook selection committees consisting of teachers and of other officials are generally appointed. These committees usually hold public hearings as part of the selection process and are assigned responsibility under complex procedures intended to ensure a reasonably objective and open selection process, the adoption of good materials, and the lowest available book prices.

The textbook selection process includes detailed standards for textbook manufacture (the specifications of the Book Manufacturers Institute). Also common is a device called "lowest price clause," similar to most-favored-nation status in international trade, which guarantees all sizes of school districts the lowest price offered by the publisher anywhere in the United States.

Major adoption states such as California (11.97 percent of total textbook sales in 1984), Texas (62 percent), and Florida (4.07 percent) probably exert a disproportionate influence over the general content and appearance of textbooks. These states, for example, have made it almost mandatory for publishers to produce Spanish translations of their major basal series in mathematics and science (often as loss leaders) if they hope to gain state adoptions. But the influence of these states can fluctuate from year to year and tends to be balanced by the pluralism and consensus on major educational objectives in the United States as a whole. Although the top ten states account for some 55 percent of textbook sales, they include only three adoption states (with a total of 22.78 percent of total textbook sales). In 1984, the top twenty states accounted for 74.7 percent of

textbook sales and included nine adoption states (with a total of 34.63 percent of sales).

Provision of Textbooks

As a general rule, textbooks for elementary and secondary school students are bought with public funds and loaned to the students. Some states or localities may charge parents a fee for loaned books. In parochial and other private schools, parents pay for textbooks.

Education, as noted earlier, is the responsibility of the states and is financed almost in equal parts by state revenues and local real estate taxes. In 1984, state revenues accounted for an average of 49 percent of educational costs nationwide and local taxes and other revenues for 44.8 percent of the costs. Only 6.2 percent of total expenditure on education came from the federal government.

Because funding for education depends heavily on state and local resources, there are vast differences in the levels of spending per student among different states and even among localities within states—although state funds may be used to ameliorate the differences between wealthy and poorer localities. In 1984, for example, New York and New Jersey spent more than $5,000 per student compared with $2,500 per student in some of the less affluent states. Differences in spending per student affect all areas of education—teachers' salaries, administration, expenditures for plant, and textbooks.

Textbook Budget

At present, less than 1 percent of the national budget for education is spent on textbooks. This is roughly half the percentage spent on textbooks during the 1960s in the wake of a national reaction to the launching of Sputnik.

During 1984, combined expenditure per student for textbooks in elementary and secondary schools ranged from $16.78 in Alabama to $44.85 in South Dakota. Average expenditure per student was $27.79. At the elementary level, about 55 percent of the budget for textbook materials is spent on language arts, 20 percent on mathematics, 10 percent on the social sciences, and 8 percent on elementary science.

The Educational Publishing Industry

Educational publishers are here defined as publishers that produce books for elementary and secondary schools. By tradition, elementary and high school books are produced by private enterprise and paid for by public funds. Sales of elementary and high school publishers amounted to $1.3 billion in 1984 as against a total of $7.8 billion for all publishers in the following categories: trade, religious, professional, book club, mail order, mass market paperback, university press, college text, test, subscription and reference, and audiovisual.

In common with the industry in other countries, book publishing in the United States is not a large business in terms of sales. The publishing industry is unusual, however, in the variety of its offerings. The number of titles published worldwide that are available on every possible subject and for every conceivable purpose and taste compares favorably with the range of products of almost any other industry.

Industry sources estimate that there are at least sixty-five companies engaged in schoolbook publishing as their primary function. Some of these companies are part of larger publishing groups; and in addition, there are hundreds of smaller publishers that occasionally obtain a school adoption. A small number of companies hold relatively large shares of the schoolbook business. The five largest may account for as much as 40 percent. But their ranking order may well change from year to year on the basis of major new adoptions.

John H. Williamson, then president of the Silver Burdett Company and an astute observer of the industry, wrote in 1979:

> The school textbook industry has a number of unique characteristics . . . It is probably the only highly competitive industry whose prime market is governmental agencies, which receives no subsidies and that is subject to many restrictions like those placed on public utilities, but without any of the concomitant benefits.

The adoption process (which requires that publishers distribute free tens of thousands of review copies), the lowest price clause, and price maintenance (under which a publisher agrees to supply books at the initially agreed-upon price for several years during the adoption period) are all part of an intricate network of specifications and regulations that govern schoolbook publishing in the United States.

Criticism of textbooks is a fact of life in any society where freedom to criticize exists. In the United States, where searching inquiries as to "Why Johnny can't read" are common, textbooks and their publishers do not escape criticism. Textbooks that are produced for thousands of individual school districts across a country as vast as the United States are obvious targets for diverse special-interest groups that would prefer their own, more regional versions of textbooks for their schools. Yet school boards are reluctant to pay the extra costs involved in regional editions, an attitude understandable under present economic conditions and tight budgets. They customarily insist, too, on lavishly produced, richly

colorful presentations. Their attitudes, which favor national editions, are unlikely to change soon, although new technology such as computer-generated manuscripts and composition may make custom editions more practical. Publishers, caught in an economic bind with investments of $10–$20 million in a basal series, need a broad market for their products to recover their investment. They have little choice but to try to compromise between conflicting curriculums and present a range of attitudes and values that will make their books acceptable to most states on the basis of price as well as content and presentation.

Textbook publishing is governed by curriculums and by the nature of the adoption process, which together determine what schools will expect and accept in their books. Schoolbooks mirror societal values currently acceptable in the community. They follow trends but rarely set them. In periods of radical change, such as the United States has experienced since World War II, textbooks are often left behind. This is true not only because it takes time to prepare new editions but also because, under the lending system, textbooks may be used long after they have become outdated. With these caveats, U.S. textbooks generally enjoy wide support and acceptance by the educational establishment and constitute effective teaching tools.

There is a great deal of discussion and publicity these days about the role of computers in schools and about software, video presentations, television, and the other new media. For publishers, their entry into educational software production has been generally disastrous. It has not been for want of trying. All major educational publishers during the last decade have made investments totaling millions of dollars in the development of computer software. Most lost heavily in the process, and quite a few have all but abandoned the effort. This is in spite of the fact that the use of computers, now widely available in both elementary and secondary schools, is constantly expanding. The problem, as one publisher put it, is that schools demand ancillary materials, including videotapes and computer software, as a condition for textbook adoptions, but in the end they purchase few of these materials. Unsolved questions of hardware compatibility, copyright protection, and piracy further cloud the issue.

In the great debate about the future shape of educational materials, as well as in current research on teaching tools, the book emerges as an effective and the most widely used medium of instruction. In a period of reduced budgets, the book retains the additional advantage of being by far the most cost-effective. Publishing sources estimate that students in schools spent 75–90 percent of their time studying from textbooks. Books may be a starting point and a resource for superior teachers: in the hands of poorer teachers, they often represent the total curriculum.

Book Exports and Linkages to the Developing World

There was a time in the 1950s and early 1960s when U.S. college textbooks, particularly in the sciences and technology, became immensely popular both in Europe and in developing countries beginning to develop tertiary education. The influence of previously mentioned National Science Foundation curriculum projects was spread abroad through the export of U.S. schoolbooks and, more particularly, through licensed adaptations and translations. During these years, the U.S. government actively sponsored the use of U.S. publications abroad through programs such as the Informational Media Guarantee Program, the Regional Technical Assistance Center in Mexico City (covering Latin America), the Joint Indo-American Textbook Program (financed with rupee counterpart funds accumulated in India from shipments of U.S. food grains to that country), the U.S. Information Service–sponsored book translation programs, and others. Encouraged both by the demand for U.S. books and by government support making it possible for developing countries to purchase books in soft currencies, U.S. publishers became more and more active in overseas markets. In response to demands for lower-priced editions, major publishers initiated the so-called Asian reprint program mainly for first- and second-year college titles. A clearinghouse for making translation rights available to developing countries at nominal cost was organized, and major publishers set up subsidiary companies and entered into joint ventures with foreign publishers in Europe, India, the Philippines, Latin America, and Singapore. For example, Franklin Publications, a nonprofit foundation for encouraging the translation of U.S. books in developing countries, established offices in the Arab Republic of Egypt, the Islamic Republic of Iran, and Indonesia.

Today, much has changed. U.S. educational materials remain popular in the developing world, but they face more and more competition from local publishers. Their distribution and sale are threatened by widespread piracy in many parts of the world. U.S. government programs, which would be especially helpful in this period of a strong dollar (making U.S. books inordinately expensive), have all but disappeared from the scene.

U.S. publishers, unlike their British competitors, have always relied first and foremost on their home market for sales. This has been particularly true of school publishers, whose international sales generally amount to less than 5 percent of total sales. By contrast major college publishers might export as much as 30 percent of their total sales. Perhaps a dozen major U.S. pub-

lishers, particularly those that are strong in science, technology, and English as a second language, remain active in promoting and selling their materials to developing-country and other markets abroad. These publishers sponsor reprint editions, cooperate on translations, and enter into joint publishing ventures. Other U.S. publishers rely on small export departments, assign their titles to international book distributors and exporters in the United States, or appoint distributors in major countries around the world.

The American Association of Publishers, through its international division, supports the efforts of publishers to do business abroad, providing assistance and information. Major U.S. publishers long involved in the international marketplace, together with certain agencies, continue to promote U.S. textbooks and to make the professional know-how of U.S. educational publishers more readily accessible to the developing world.

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Organizations

American Association of Publishers
School Division
220 East 23d Street
New York, NY 10010, USA

The Publishers Association
Educational Publishers Council
19 Bedford Square
London WC1B 3HJ, England

Syndicat National de L'Edition
Edition Classique
35, rue Grégorire-de-Tours
75279 Paris Cedex 06 France

Verband der Schulbuchverlage, E.V.
Zeppelinallee 33
6000 Frankfurt (M) 1
Federal Republic of Germany

The Indian Textbook Industry

Narendra Kumar

Books are marvels of human wisdom Born out of a desire to record and share experience, they reflect our faith in the future. Educating, informing, and disseminating ideas and knowledge have been until recently almost the sole preserve of books. This instructional emphasis is reflected in the fact that even today educational books constitute a high percentage of total publishing activity in the world, especially in India and other developing countries. In India alone, textbook publishing accounts for more than 90 percent of the total number of books published. India's population is nearing 700 million. Most belong to the age group 5 to 22 years, which has the potential for enrollment in schools and institutions of higher learning, for nonformal education, or for vocational training.

Since independence, India has made considerable progress in increasing the number of all types of educational institutions, expanding their enrollment, and promoting the sophistication and diversification of educational programs. During the last four decades, the number of educational institutions in India has increased from 230,000 to 690,000, of which 627,000 are primary and middle schools catering to the first eight years of schooling. There are 150 universities and 5,246 institutions of higher learning.

An increase in enrollment has been evident at all levels of education. The total student population has increased from 28 million in 1950–51 to 114 million in 1982–83. Of these students, 93 million were in primary and middle schools out of a total estimated population of 150 million in the age group 6 to 14 years. Similarly, there were 9.5 million students in secondary and higher secondary schools (grades 9 to 11 and sometimes 12). Roughly 3 million students were receiving education in institutions of higher learning.

One of the most disturbing characteristics of developing countries is the high dropout rate in schools, particularly at the primary and the secondary levels. In India the secondary school retention rate continues to be less than 50 percent, wasting educational resources and forcing educational authorities to plan a system of informal, out-of-school education for a large number of regular dropouts. Nonformal education is also provided for those who, for various reasons, have not found it possible to join regular schools. The significance of this nonformal program can be gauged from the fact that as many as 1.5 million students are enrolled at nonformal centers in the nine educationally backward states.

Another segment of society that needs nonformal education is the large population of adult illiterates. The number of adult illiterates in India increased from 60 million in 1951 to 248 million in 1981, and their number in the age group 15 to 35 years today stands at 110 million. If there is no change in the present rate of population growth and the illiteracy rate, by the turn of the century the total number of illiterates in the age group 15 to 19 years could account for more than 50 percent of the world total for illiterates in this age group.

New Educational Policy

Against this background, the government of India has recently decided to tackle the educational problems facing the country in a radically different way. The government has highlighted certain important issues for nationwide discussion to formulate a national education policy, including a national book policy.

Studies have shown that in educational investment, elementary education yields the highest rate of return and has a significant impact on productivity and the general well-being of the populace. Removal of adult illiteracy is equally important inasmuch as it awakens people's interest in their environment and the enrichment of their personal life. It can also make an impor-

tant contribution to the meaningful functioning of democracy, the basis of the Indian political system. The government of India therefore is determined to halt the growth rate of population and to increase literacy. By 1990, India should be able to achieve universal primary education and the end of adult illiteracy among the age group of 15 to 35 years. Thus during the next four years, it is anticipated the enrollment in the age group 6 to 14 years will increase to 174 million (or the entire population in this age group) as against 93 million in 1982. Similarly, enrollment in secondary and higher secondary education will increase from 9.5 million in 1980 to 15.3 million in 1990. To achieve these objectives despite budgetary constraints, the government might have to adopt nonformal and distance education approaches on a large scale.

Promoting literacy, increasing enrollment at elementary schools, reducing the dropout rate from all schools, and expanding nonformal education and adult literacy programs lay a heavy burden of responsibility on those concerned with publishing reading materials for students and adults. Implementation of the government's plans would result in an almost 100 percent increase in the number of learners in the country; and whatever else they may or may not need, these learners are going to need books—because in India books will remain the dominant and most effective tools of learning for many years to come.

Current System for Publishing Textbooks

Before assessing how this new challenge can be met by the publishing community, it is necessary to look at the existing arrangements for the production and supply of textbooks. Since 1942, when the state of Uttar Pradesh in British India first began publishing textbooks, state and central governments have increasingly assumed responsibility for textbook publication. Today, practically all texts for schoolchildren in India are published by the central or state governments. Only a few states allow private publishers to operate at the secondary or tertiary level.

The agency responsible for textbook publication varies from state to state. In some, the department of education is charged with the responsibility; in others, a textbook board is attached to the department of education; and in yet others, the textbook board is an autonomous agency. But whatever the nature of the agency, in all states the government is in effective control of its functioning.

The approach to producing textbooks also varies. At the primary and secondary levels, all manuscripts are prepared under the supervision of committees set up for the purpose. The committees draw up the syllabuse for government approval and then commission authors to write the texts. Some states then print the books on their own presses; others call for tenders and contract the printing out. The distribution of books also differs. Most states have their own depots, from which booksellers purchase at a discount of between 5 and 15 percent. But in a powerful state like West Bengal, books are distributed through headmasters of schools and through block development officers.

When the nationalization of school textbooks was introduced, it was justified. At the time of independence, publishing enterprises tended to be controlled by a few large subsidiaries of foreign or multinational publishing houses. Their monopoly over textbook materials led to high prices and, sometimes, ill-concealed profiteering. The government was motivated to provide cheap, mass-produced textbooks of high quality which India's student population could afford. At the same time, the government sought to Indianize textbooks because the books then available were ill-suited to real educational needs.

Drawbacks in the System

It is more and more apparent that the policy of nationalizing school textbooks has outlived its utility and is doing more harm than good. As well as stultifying the development of a national publishing industry, it has become detrimental to the interests of the very children it was designed to serve. In short, the implementation of the policy is dogged by the same bureaucratic ills as almost any educational program. To quote from a study carried out by a committee of experts set up by NCERT (National Council of Educational Research and Training), the principal national agency for the publication of school textbooks:

> They [public sector publishers] are seriously handicapped by a total absence of technical personnel to attend to the production and editorial segment of book production . . . The manuscripts go directly to the printing press without being subjected to the editorial drill or type marking, visualizing, dummy making, etc. In the absence of a professional editor which constitutes the most important single area of responsibility, the end product, in a large number of cases, suffers from presentation, printing and production . . . They [books] lack the color and appeal necessary to stimulate the young mind. Further, publication and marketing of textbooks requires professional knowledge and experience which departmental officers handling the job generally do not possess.

Though the committee submitted its report more than a decade ago, its observations are still true today. The Department of Education's management of text-

books has suffered from various deficiencies such as delay in publication and faulty distribution. These deficiencies have been sharply criticized, even by those who are otherwise not averse to a state monopoly over the publication of textbooks.

It is true that government-produced textbooks are cheaper than those produced by private publishers, and there are cogent reasons for this. Government producers of textbooks do not include overhead when costing their books; they take into account only the direct manufacturing and distribution costs. Furthermore, they publish for a captive market, use the cheapest materials, and provide a very large discount to booksellers. The authors are not paid a royalty but a prescribed fee. Government agencies also have access to paper at highly competitive prices compared with the exorbitant amounts that private publishers have to pay on the open market. Private publishers have to make a profit to support their publishing programs.

Apart from production and distribution, the authorship of school texts is also entirely controlled by the government. Most texts are neither pretested nor updated. Insufficient care is taken in the screening and commissioning of authors, and a disturbingly large number of texts suffer from a dull uniformity born of a sameness of approach. But such criticisms are of small consequence, simply because there is no other choice.

The Single Textbook Situation

That there is no choice is perhaps the most deplorable drawback in the existing monopolistic setup. It is educationally unsound to prescribe for all students a single textbook in a particular language. This point has been emphasized by nearly all the expert committees and commissions set up by the government to review education. The University Education Commission in its report of 1966 stated that "no useful purpose is served by having only one textbook in a subject for a given class, as is almost invariably the position under the existing program of nationalization."

The Secondary Education Commission set up earlier by the government also stated that "in place of prescribing a single textbook, a number of textbooks may be approved and the schools may be given the option to select one of them as per their requirements."

The working group set up by the National Book Development Council, a government-sponsored organization, suggested in its recent report that "the single textbook situation in regional languages in schools should be remedied" and that "multiple books for each level, both as textbooks and as supplementary readers, be produced so that the learning child is given the option to enhance the universe of discourse, as the same truth can be expressed in different languages; the same material presented in different ways enhances the coping ability of the child to operate in the multilingual world. This would also help the child to become creative and innovative."

The soundness of the policy of making alternative books available to students is borne out by the fact that the English middle schools, having the freedom to choose their books, continue to maintain high academic standards and are known to be among the best schools in India. State monopoly over the publication of textbooks and the prescription of a single text for all children have deprived publishers of their freedom to publish, authors of their right to receive an equitable royalty, and teachers and students of their right to choose from among the best available publications. With respect to "freedom to publish," I should emphasize that this is a right cherished by publishers in all other countries which, like India, practice democracy. The International Publishers Association passed the following resolution: "Governments which have undertaken textbook publishing [should] take prompt steps for turning over this responsible task to the private sector, which is best suited for such an undertaking."

Structural Changes in the Educational System

A significant change in the educational pattern in India, which has a bearing on the publication of textbooks, is the "10 + 2 + 3" system of education. This system stems from a recommendation made by the government's University Education Commission (1964–66). The commission felt that the existing system of ten (in some states, eleven) years of school ending in matriculation in higher education was academically unsound. Students graduating from school did not attain a sufficiently high academic standard or acquire enough maturity to pursue a higher education or to enter a profession or vocation. The commission therefore recommended that schooling should last twelve years, comprising ten years of general education integrated with science, mathematics, and social studies followed by two years of preprofessional learning that branch into various activities, of which vocational education should constitute an important part. The commission also recommended that the duration of the first degree course be reduced by one year—that is, it should be three years.

This recommendation has been implemented in many states and caused a substantial reorganization of textbook production. For one thing, the new system has necessitated the publication of a large number of books for vocational studies; for another, it has required restructuring the content and approach of books for students who previously studied in college. Further, the new framework in schools is expected to cut across the

conventional boundaries within the arts and humanities and to merge physics, chemistry, and the biosciences into a single general science course. Many books prescribed for the new system continue to present knowledge in the same segmented way—in single covers under the name general science or social studies.

Mother Tongue as Medium of Instruction

A working group set up by the government to propose a national book policy for the country observed:

> India is one of the rare countries that has given a Constitutional guarantee of primary education through the mother-tongue. But this provision appears to be honored more in the breach than in the observance. Only 58 languages out of 200 to 700 languages are used as primary school languages . . . It is therefore, important that with a view to meeting the rising identity assertion of groups and providing a sound pedagogical base to education, the Constitutional guarantee of a primary education through mother-tongue is implemented . . . and that for primary schoolchildren we should aim at producing books in as many mother-tongues as needed to be instructed in.

These mother tongues represent variations of thirteen major regional languages which have been accepted as languages of administration, education, and communication in the various states of the country. The working group therefore recommended: "Proper linkage of these mother-tongues with 13 major languages at the next higher stage in schools."

The acceptance of this sound educational principle lays a still greater responsibility on the shoulders of those charged with the task of producing textbooks, who already are handling a greater volume and variety of books than ever before. Obviously such a task cannot be accomplished by the public sector alone. As mentioned earlier, there are at present more than 110 million students studying in approximately 700,000 primary, middle, and secondary schools across the country. As a result of the overriding priority given to the universalization of elementary education and of the spread of literacy envisaged in the new educational policy, this number is going to increase significantly in the years to come.

Ill Effects of State Monopoly on Textbooks

More than 80 percent of the entire publishing of school textbooks in India is undertaken by the government or related public agencies. This is a 1 billion dollar a year business. In many other countries, money generated from textbook publishing is used to finance creative and nonacademic writing, and because textbook sales are assured and are renewed each year, this makes for a stability that encourages sustained publishing endeavors and historically has been responsible for the publication of many great books.

Because of the government's monopoly in textbook publishing, many small and medium-size publishers have been elbowed out, particularly those concerned with publishing in regional languages, whereas others have been obliged to undertake the publication of class notes and course guides—clearly not a healthy trend! More serious, many of the bigger publishers have been deprived of a sound financial base because they are denied a regular and substantial income from the publication of school textbooks. In Japan, conversely, publishers' profits from textbook sales reportedly allow them to bring out, on a nonprofit basis, reasonably priced children's books which are known all over the world for their colorful presentation and excellent production. Finally, the withdrawal of such a lucrative business has prevented the publishing industry from undertaking large-scale exports, an activity for which India possesses good potential.

Aggravating matters is the fact that many public publishing agencies have set up their own presses to print textbooks. This trend appears to be on the increase, notwithstanding the fact that the private printing industry is perfectly capable of meeting the growing demand. Thus a great disservice is being done to the printing industry by underutilizing its available capacity.

Finally, because of the vast technical and professional expertise available to them, private publishers are in a better position to discover the most competent authors. This has been amply proved by the private publishers' management of university textbooks.

Sharing Responsibility

In the light of all this, to increase the production and distribution of textbooks the central and state governments will have to allow the private sector a substantial share in textbook publication. State boards and agencies should instead concern themselves at the more basic level with reviewing policies, developing examination procedures and curriculum requirements, and determining ultimate objectives and alternative strategies for the educational system.

Even if the government does not at present consider it feasible to transfer textbook publishing to the private sector, however, it must take immediate steps to undo the harm that the monopolistic publishing of books has done to academic and production standards and to timely promotion and prompt distribution. In this context, one pertinent recommendation is that NCERT and the agen-

cies concerned with state textbook publishing should confine their activities to the preparation of detailed guidelines for the writing of textbooks. Publishers can then be asked to produce books according to the guidelines and to present them for review to competent government agencies. Apart from offering an educational choice, the approval of two or three books on the same subject for the same grade would improve the quality of writing and production through healthy competition. But should official agencies still insist on preparing the manuscripts themselves, they should encourage their publication and distribution through private channels so as to make the books available to students at moderate prices and in good time. And here the government must take steps to ensure that the academic quality and standard of these books is maintained and that they are appropriate for children in different parts of the country.

The need for private involvement in the publication of school textbooks has been persistently voiced by the Federation of Indian Publishers. The stand taken by the federation has received powerful support from many eminent educators and from the working group recently set up by the government to propose a National Book Policy. This working group has gone on record: "Considering the enormity and complexity of the task [in pursuance of the new education policy and the national book policy], it is recommended that the publishers in the private sector fill in the publishing gaps in book production, especially in remedying the single textbook situation."

University Books

University books are the second important component of educational publishing in India. In a comparatively short time, India has done well in this sphere. On achieving independence in 1947, India was practically dependent upon the United Kingdom and the United States for almost all its books for higher education, a situation which continued for quite some time. The Indo-American Textbook Program was introduced in 1961. According to this program, a portion of U.S. Public Law 480 (hereafter PL-480) funds in Indian currency (accumulated by the Americans through sale of foodgrains to India) was to be utilized by the United States to subsidize Indian reprints of U.S. books. Soon after, the United Kingdom made large inroads into the Indian book market with low-priced educational and technical books under its English Language Book Society (ELBS) program, which was introduced in 1962. The ELBS program served not only India but also a large number of other developing countries which used English as a language of instruction, but India was its major beneficiary.

According to statistics from the Ministry of Human Resource Development, the United States subsidized the printing of more than 1,620 titles under the PL-480 program and the British furnished 720 titles for use by students in colleges and universities. Both schemes were welcomed by the government as well as by students because they made available educational texts at fairly low prices at a time when university education was rapidly expanding in India. Further, some reprint publishers, particularly subsidiary firms of some of the U.S. publishing houses, made substantial profits from the PL-480 scheme.

In the last analysis, however, these programs worked against the interests of indigenous publishing because Indian-produced books could not compete with books of foreign origin, which were being sold at one-fifth of their original price. Because of the discontinuation of supplies to India under PL-480, however, the number of publications subsidized by the United States began progressively to decline. The British were also obliged to reduce the supply of their books under the ELBS program. In the meantime, in 1965 India entered into an agreement with the U.S.S.R. to exchange educational books and materials under a joint Indo-Soviet Textbooks Program. But even in this program, India remained largely at the receiving end: according to available information, India has been supplied with 530 Soviet titles since the inception of the program.

At the same time, India began to realize the baneful effects of continued dependence on imported books. The importation of these books, particularly those of the ELBS scheme, used up scarce foreign reserves. But of more significance, national authorship was inhibited and the development of an indigenous publishing industry was stultified.

Indigenous Schemes for Subsidies

Motivated by the desire to conserve foreign exchange and encourage indigenous authorship, the Indian government has recently been quite circumspect in approving books for import under both the ELBS and Indo-Soviet programs. As a matter of policy, only those titles are approved for which books of comparable standard are not available in India. At the same time, the government has launched a scheme for subsidizing university books by Indian authors. The responsibility for implementing this scheme was given to the National Book Trust, a public publishing organization. Subsidies cover 60 percent of the cost of production. Both authors and publishers receive their royalties and shares of subsidy in good time, and students are able to buy books at low prices.

This scheme has been commendable in its promotion of indigenous educational authorship, particularly in specialized areas, and has also provided a boost to the

publishing industry as a whole. To date, the National Book Trust has subsidized 700 titles, and publishers have produced 2.5 million copies of subsidized titles. Although originally intended to cover language-instruction books in English only, the scheme has recently been extended to include books in Hindi, the medium of instruction in many universities in the Hindi-speaking areas of the country. It is also proposed to publish books in other Indian languages.

Quite a few universities have set up their own units to publish academic monographs, research papers, and other scholarly works. Apart from this, the University Grants Commission (a statutory body established to provide financial assistance to universities so as to ensure maintenance of uniformly high standards) has devised a scheme for encouraging college and university teachers to become authors by offering them fellowships to prepare manuscripts on approved subjects. Accordingly, a number of learned academicians has been working on books, especially books on highly specialized subjects which so far have been the preserve of authors from developed countries. The Indian Council of Social Science Research and a few other institutions of higher learning also have undertaken to finance selected publication projects such as doctoral theses and other highly specialized works.

To promote the publication of university books in various Indian languages, in the 1970s the government sanctioned a grant of 10 million rupees to each state for the production of books in their respective regional languages. This was to have been a revolving fund: proceeds from the sale of the books were supposed to have been utilized to publish more books in regional languages. The scheme unfortunately has not achieved the desired results. Many states, particularly in Hindi-speaking areas, have failed to create revolving funds, primarily because they have been unable to sell the books they have published. And students in certain states have complained that regional-language books in some subjects are unavailable. The failure of some universities to ensure that Indian languages are the media of instruction has no doubt adversely affected the sales of these books.

The publication and marketing of books in regional languages can be effectively tackled only by those who possess the necessary expertise. Members of the working group set up to draft a national book policy are reported to have suggested that the government review the scheme to grant Rs10 million to each state and take remedial measures to ensure its success.

Private Publication

The financial support provided by government and government-related agencies for the publication of university books has without doubt helped lessen dependence on books of foreign origin. In the meantime, some enterprising publishers have taken up the challenge and produced a large number of scholarly books which not only compare favorably with imported books but also are more relevant to the requirements of Indian students. The publication of such books has increased progressively over the last few years, and today India is almost self-sufficient as far as undergraduate and postgraduate books are concerned. Only in highly specialized scientific and technical subjects are books of foreign origin still needed. Indeed, publication of university books has now reached a stage at which India is in a position to export them to some of the developing nations in South and Southeast Asia, the Middle East, and Africa. In 1983–84, export sales of books were about 150 million rupees, and scholarly books accounted for a good percentage of this amount. Indian books meet the needs of developing countries where English is the medium of instruction for higher education. In addition, production standards of Indian books have improved substantially over the last few years, and prices compare favorably with those of other countries.

Handicaps and the Future of Private Publishing

India now enjoys a secure place in the publishing world despite many handicaps and constraints. As discussed, the private publishing industry has been deprived of a sound financial base by being denied the right to produce school textbooks. Because of phenomenal increases in the price of paper, it has also been faced with an extremely difficult situation regarding raw material. Publishing is not recognized as an industry in India, and banks do not allow credit for publishers because they do not consider books sufficient collateral. Far more serious than all these handicaps, however, is the unhealthy competition that publishers face from unscrupulous merchant importers who obtain obsolete remaindered books from the West at throwaway prices and sell them to libraries and other buyers at exorbitant prices. Under the government's Open General Licence policy, a large number of educational books can be imported by traders; but this policy is exploited for importing books which have been remaindered in their countries of origin.

On the more positive side, Indian publishers can look forward to a reasonably bright future. The second most populous country in the world has no option but to step up the production of books, especially textbooks. There are firm indications that the challenges posed by the new education policy in producing textbooks and supplementary reading materials will have to be met jointly by public publishing agencies and private publishers. The vast potential for disseminating Indian books, including schoolbooks and university books, to coun-

tries of the developing world points in the same direction.

The working group set up for formulating the national book policy has strongly recommended to the government that a Book Finance Corporation be established to provide credit facilities to publishers. This group has also supported measures to prevent the importation of obsolete books, and there is reason to hope that these measures will be adopted.

Amendments to the Copyright Act

A number of educational books, both indigenous and imported, have been pirated by unscrupulous traders both in India and at notorious centers of piracy in neighboring countries. Recently, India enacted legislation to fight this menace: according to new provisions in the Indian Copyright Act, infringement of copyright has been made a cognizable offense punishable with imprisonment for not less than six months (and up to three years) and with a fine (of not less than 50,000 and up to 300,000 rupees).

Meanwhile, some publishing circles in the West have expressed concern over another amendment to the Indian Copyright Act about the issue of compulsory licenses for the reproduction or translation of foreign books. They fear that this amendment might harm the interests of the original publishers, particularly textbook publishers, in their own countries. It should be emphasized, however, that compulsory licenses are subject to so many restrictions that a publisher can resort to this practice only after it has given documentary evidence that it has failed to secure the right of publication or translation of a particular book despite all possible efforts to arrive at a mutually negotiated agreement with the owner of the copyright. Further, books published under compulsory license cannot be exported and may be used only for educational or instructional purposes.

Finally, because India has become almost self-sufficient in the production of university textbooks and because the procedure for acquiring the license is cumbersome, there is little likelihood of Indian publishers applying for, or the government allowing, many books to be published under compulsory license. Indeed, no publication of foreign origin has been licensed for reproduction or translation for more than a year.

Value-Based Textbooks

Textbooks remain the most powerful medium for inculcating basic principles and long-cherished values in the young. They also help in achieving the long-term objectives of education. Four decades ago, Mahatma Gandhi, who enunciated the most revolutionary educational principles, insisted that true education must make a child "mentally poised and morally excellent."

In a vast country like India where people practice so many different religions and speak so many different languages, regional integration is at times under considerable strain because of divisive forces arising out of caste and religious beliefs. There is therefore an urgent need to inculcate the value of national cohesion by apprizing young Indians of the dangers of communal and caste fragmentation and helping them to recognize the need to strengthen the composite culture of India. This can best be done when books, especially textbooks, are made socially relevant, fostering in students a pride in their national heritage and a commitment to maintaining India's unity and integrity.

The government and people of India are fully conscious of the need to restructure the educational curriculum and to create textbooks for students in schools and universities with a view to achieving the objectives of unity and national pride. In the process, a whole nation will be led, to quote from an ancient Indian scripture, "from darkness to light, from ignorance to knowledge."

Mexico's Free Textbook Program

Peter H. Neumann and Maureen A. Cunningham

More than twenty years ago, Mexico faced and overcame the political, economic, and technical obstacles to a large-scale national free textbook program. Similar obstacles are responsible today for the critical shortage of appropriate textbooks in most developing countries—a shortage which delays the improvement of primary and secondary education while it places additional burdens on generally underpaid, overworked, and undereducated teachers.

Mexico recognized that the use of textbooks raises academic standards and increases the efficiency of school systems. Therefore it has given the development, production, and distribution of textbooks the same priority in the education budget as teachers' salaries and school buildings. No other factor has been as critical to the success of Mexico's free textbook plan as the continuous provision since 1959 by successive Mexican governments of adequate annual funding for the National Commission for Free Textbooks.

Over the last twenty-five years, Mexico's free textbook program has created a sense of national unity in the minds of Mexican children and has reaffirmed the socioeconomic principles of the Mexican Revolution. At the same time, with government backing and support, the country has developed the most dynamic private publishing industry in Latin America. This chapter, which is a condensed version of a much larger study (Neumann and Cunningham 1982), summarizes important lessons from the Mexican experience about the development and publication of schoolbooks intended to support the teacher and instruct the child.

Investment in Education

Mexico's free textbooks for primary schools, as well as the range of other educational materials produced and subsidized by the government, represent an impressive achievement under any circumstances. In our experience, it is a unique accomplishment for a developing country with limited resources. Nationalism and the recognition of the urgent need for education (both major forces in the Mexican Revolution) have provided the organization, the talent, and the money for these programs. By 1981, every Mexican child ready to enroll (some 15 million children out of a population of close to 70 million) found a place in primary school and was given free textbooks in each subject.

The Mexican government views education as an investment rather than as an expense and has liberally invested in education. In 1959, the Mexican government nationalized the publication of textbooks for primary schools by establishing the National Commission for Free Textbooks (CNLTG). Succeeding governments have continued their strong support for the CNLTG. The Secretariat of Public Education (SEP), with its hundreds of thousands of teachers, is said to account for nearly half of all government employees in the country. In 1959, almost 16 percent of the national budget was allocated to education. In 1980, the total budget for education was approximately 160 billion pesos (Mp; $6.7 billion). The production and distribution of free primary school textbooks in 1980 accounted for about Mp700 million ($29.2 million), or less than 0.5 percent of the total budget for education. Together with all other books and periodicals either published by or subsidized by the SEP, the government spends perhaps 1 percent of its education budget on educational materials. According to the Mexican authorities, this is an insignificant expenditure in relation to the total investment in education, and yet it is one of the most essential. This endorsement by Mexico of the relation between academic achievement and the availability of textbooks is backed by results. It makes the study of the Mexican experience important to those responsible for educational development in the developing world.

The nationalization of a part of the private publishing industry in a democratic country does not go unchallenged. In Mexico it was opposed not only by the national publishing industry but also by large segments of the general public. Nationalization of textbooks engenders the suspicion (still noticeable in the popular press twenty-five years later) that the government may use its monopoly to shape the views and attitudes of young citizens in its own political image rather than letting them discover their own opinions by reading diverse materials. The remarkable stability of the Mexican political system (the ruling party of which has been in uninterrupted power since 1929) no doubt has served to blunt these concerns.

The nationalization of an important market segment such as primary school textbooks could have done irreparable harm to the growth of Mexico's private publishing industry. But succeeding Mexican governments showed restraint by not extending nationalization beyond textbooks for the six grades of primary school. They offered, in addition, support to private publishers through joint projects, through licenses to import paper and equipment, and through export subsidies to the Mexican book trade. Of most importance, the development throughout the country of a public library system which purchases books in large quantities from commercial publishers together with the rapid growth in enrollment in secondary schools and in universities (outcomes of Mexico's investment in education) have provided expanding markets for Mexico's flourishing book industry.

General Principles

The Mexican experience offers valuable lessons to those concerned with providing textbooks to the developing world. It confirms general principles that govern textbook production and supply in both developing and developed nations:

- Textbooks deserve the same priority in the educational budget as teachers and buildings. The use of textbooks raises academic standards and greatly increases the effectiveness of a school system.
- To secure an adequate supply of textbooks for schools requires a long-term commitment by the government and adequate annual funding.
- An adequate supply of textbooks for primary and secondary schools—whether produced by private publishers, by a government agency, or by a combination of both—can be financed by allocating a small percentage (for example, 1–4 percent) of the total educational budget for this purpose.
- The decision by the government as to whether to nationalize the publication and distribution of textbooks or to promote the growth of a private publishing industry should be made only after careful study of all the alternatives.
- The publication and distribution of effective textbooks to schools on a regular basis is a long-term undertaking. It took Mexico's National Commission eleven years to complete its initial program of textbooks for grades 1 to 6 of primary school. These textbooks, it was generally acknowledged, were not as good as others then available from private publishers. Time and money could have been saved if expert advice had been sought by the Mexican government in the planning stages of the free textbook program.
- A successful system for maintaining a supply of textbooks for schools depends on a network of cooperating institutions and on public support. Such a network includes state and local government authorities, the ministry of education, professional organizations, teachers' associations, publishers, and parents.
- It is not common practice (outside of socialist governments) for a central government alone to finance textbooks for primary and secondary schools. Far more common is a sharing of the expense by the central government, state and local authorities, and parents. A careful study of such financial alternatives and the selection of what is locally feasible and appropriate may lead to the establishment of a reasonable basis for long-term funding.
- In addition to writing and editing skills, the publication of textbooks includes the functions of structuring and designing content; testing the effectiveness of the proposed content; producing and printing the textbooks; promoting the textbooks to teachers; distributing them to schools; and periodically revising them. In short, the publishing process requires skilled, permanent, professional organizations and considerable investment. This is so whether the task is undertaken by a national textbook agency or private publishers.

The complexity of the publishing process demands that a national textbook agency either be able to attract skilled technicians (often from private industry) conversant with all the aspects of publishing or be able to train and to retain such staff by using outside assistance. These demands require an organization with a wage scale and salary structure different from that of the civil service, which is a problem for governments. Mexico solved the problem by creating a semiautonomous organization, the CNLTG, and by providing it with its own

budget. If a similar approach is not possible for a government, it is far better for it to assist private publishers with the task of textbook production.

Wherever private publishers produce textbooks (and regardless of whether these textbooks are purchased with public or private funds), the process of selecting, purchasing, and distributing can be and should be regulated by appropriate laws and regulations—models for which might be adapted from many nations around the world. For example, Mexico regulates the approval and pricing of secondary school textbooks published privately and purchased by parents

Printing is not publishing; the two should not be confused. Mexico opted to establish a giant, well-equipped printing plant run along commercial lines by the CNLTG. This plant prints the majority, but not all, of the free textbooks. Such an arrangement allows the plant to run at full capacity, and the use of outside printers allows it the flexibility to expand or contract its production schedules according to changing annual demands. A national printing plant, however, is not essential; and because of the investment and upkeep, it may not be desirable where other options exist for printing textbooks on an acceptable schedule and at a reasonable price.

Criticisms

A major criticism of the Mexican free textbook program is that it offers the teacher no choice. Each school across a culturally and economically diverse nation has to use the same set of basic books in grades 1 through 6. This problem is being overcome to some extent by encouraging schools to purchase, with their own funds, materials from private publishers. For instance, it is not unusual for more affluent schools in metropolitan areas to use commercial textbooks for enrichment or for additional practice. Furthermore, under the free textbook program, the Ministry of Education is beginning to sponsor different regional versions in, for example, geography and local history.

Another criticism frequently leveled against national textbook programs is that the books are written without sufficient testing and input by local teachers. Mexican textbooks, critics have charged, are written by university professors and ministry authors insufficiently aware of the needs, and especially the limitations, of rural teachers and students. Such criticisms were extremely widespread in response to the first generation of textbooks (published between 1960 and 1971), and only slightly less so in response to the second generation (published between 1972 and 1979). As a result of such adverse reaction, free textbooks were not used effectively in the classroom and, in extreme instances, were boycotted by teachers.

In preparation for the third generation of textbooks (beginning in the early 1980s), the editorial responsibility was transferred from the CNLTG to a newly formed, professionally staffed subdivision within the Ministry of Education. The new unit, which combines responsibility for curriculum development with the preparation of textbook materials, has instituted extensive classroom testing of new texts and of teachers' editions. In a radical departure from common practice, the new texts integrate subject materials in grades 1 and 2.

Mexico's program of free textbooks for every child in the six primary grades has had an extremely positive effect on primary education. The free textbooks encourage good citizenship and a sense of national identity among Mexico's children. Successive generations of textbooks have improved as tools for teaching and are more imaginative in color and design. Today, most of the books are in four colors and are handsomely illustrated, even though they are printed on newsprint and are not designed to last much longer than a year. Ninety-three million textbooks were produced in 1982 alone. They are distributed through an ingenious system involving the national railroads, trucks, and eventually mules—an impressive accomplishment in scheduling and organization.

The free textbook program has been a positive experience for Mexico. In interviews with government officials and with private publishers and in reports and articles reflecting the views of educators and of parents, we found a strong consensus that free textbooks have been good for education and that they represent a proud national accomplishment.

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The Philippines: A Textbook Case

Alfonso de Guzman II

The Philippines is now in its tenth year of providing textbooks under a two-phase government project. The first four-year phase was cofinanced by the government and the World Bank and saw the development of seventy-five titles and the printing and distribution of 27 million books. This first phase (1978–81) was characterized by remarkable activity in development and production. The succeeding phase (1982–83) was largely one of improvisation. characterized by a slowing down of production and by institutional uncertainty.

The First Phase, 1978–81

The initial phase of the project was planned for four years but took five years to implement. A Textbook Board Secretariat (TBS) was organized with temporary staff to increase the supply of textbooks in public elementary and high schools and to establish the institutional capacity of the government to supply textbooks to schools. *Akiat Para Sa Lahat* (Pilipino for "books for all") appears on the seal of the TBS and on the cover of all project materials.

Objectives

The project set out to do the following:

- Establish and support five centers for developing curriculums and writing seventy-five textbooks and teachers' guides in science, mathematics, social studies, Pilipino, and English for elementary and high schools.
- Expand the functions of the Textbook Board (the education ministry's body for approving textbooks) to include overall management of the scheme for providing textbooks—from planning and writing through printing and distributing 27 million books and from teacher training to testing and evaluation.
- Establish a network of 1 central and 107 provincial warehouses for the continuous delivery of textbooks to schools at the ratio of one textbook per subject area for every two students.
- Establish fourteen staff development centers at the regional level and designate thirty-four development high schools as the network for field-testing textbooks and training about 250,000 teachers in the use of the new books.

Accomplishments

By the end of the first phase in 1981, the project had exceeded its targets. In textbook development, five curriculum centers were established as planned, and curriculum studies and research were begun in their respective subjects. Following a three-year development cycle for textbooks (one year for planning, research, and writing; a second for field-testing; and a third for revision and printing), the curriculum centers (collaborating with TBS editors and testing specialists) undertook the writing of manuscripts and full-year tryouts of experimental editions in between twelve and forty representative schools. The centers also revised manuscripts after the field-testing and approved the final production versions of the complete series in the five chosen subjects for the ten grades of basic education. In all, ninety-two textbooks and teachers' guides were developed, seventeen more than planned.

Meanwhile, the TBS recruited 130 staff for the editorial, production, manufacturing, distribution, and training and evaluation divisions and for the necessary finance and administrative support units. Some 27,000 metric tons of paper and cover stock were procured. By the end of 1981, 33 million books had been printed—

6 million copies over target—and there was enough paper left for the next two years' production.

A central warehouse in Manila and 54 provincial warehouses were built, and 98 others belonging to the Ministry of Education, Culture, and Sports (MECS) were refurbished and equipped for textbook distribution. To facilitate communication with the central warehouse, the thirteen regional offices of education, as well as the more remote warehouses, were provided with radio transceivers. Yearly, the project provided funds to the regional offices for textbook distribution. Through this network of 152 warehouses, 32 million books were distributed to the school system, improving textbook-student ratios to one book per 2.3 primary students, one per 6.1 intermediate students, and one per 7.6 high school students by 1981. The distribution performance exceeded the original target by 5 million copies.

Teacher training in the effective use of textbooks was planned by the TBS in collaboration with the curriculum centers and the bureaus of elementary and secondary education; it was implemented at first through fifteen regional development centers and later through the offices of the regional directors of education. From 1977 to 1981, nine training programs were conducted and the number of trainees totaled 368,000 (including 50,000 principals, supervisors, and higher-level administrators). This was 118,000 more trainees than had been anticipated.

Impact studies were conducted on sixteen textbook titles introduced by the project. Using standard tests developed for the purpose, the learning achievements of students who used the new books and those who did not were compared. Test results showed significant improvements among textbook users.

Major Problems

Aside from the usual start-up difficulties experienced by any new enterprise (recruitment delays, frequent changes in just-formulated work procedures, inadequacies in office facilities and services), the project encountered the following major problems during its first implementation phase:

- Content and presentation in the new textbooks varied from the official prescribed curriculum.
- Feedback from field tests came late and yielded little useful data for manuscript revision.
- Manuscripts were submitted late; final, print-ready pages were delayed, throwing off printing, distribution, and teacher-training schedules.
- Paper imported in bulk was not managed efficiently resulting in costly warehousing, loss, and damage; printing-contract awards were also delayed, preventing the project from releasing paper stocks to printers and worsening paper congestion at project warehouses.
- The annual financial assistance to the regional offices arrived in the field late and frequently lapsed; without operating funds at the local level, textbook shipments to schools were delayed.
- When textbook deliveries were late, teacher training in some provinces sometimes took place without the new materials.

The Second Phase, 1982–85

In 1981, the government began implementing a ten-year program to improve elementary education. The program was financed by the World Bank for the period 1982–85.

Objectives

Beginning in January 1982, the objective of the textbook project would be to become the instructional materials component of the new program, with the task of developing a variety of products (textbooks, supplements, and learning materials such as science kits, film, and tape) to support the introduction of a new elementary curriculum during the period 1983–88. At the same time, using regular (nonloan) funds, the project would continue to resupply textbooks and teachers' guides to public high schools. The combined elementary and high school production of all types of printed materials would be about 10–12 million copies annually.

To improve textbook distribution, the project would expand its network by building twenty-six more provincial warehouses. To improve overall management, operations would be computerized, and the TBS would be transformed into the state corporation for textbooks and all other instructional materials.

Accomplishments

During the three-year period 1982–84, the textbook project developed 41 new textbooks, teachers' guides, and workbooks; revised 48 other titles in its backlist; printed 30 million copies of various instructional materials and distributed 29 million of them; and conducted two more rounds of training for 58,000 teachers and school administrators.[1]

Major Problems

Without its curriculum centers, which had been disbanded in 1982, the project was forced to publish untested materials to support a new elementary curriculum hastily introduced in 1983. The project also

experienced delays in purchasing paper and printing services. Security features were added to the paper specifications to prevent the unauthorized use of this tax-free and highly marketable government property for other, nonproject materials. But suppliers could not initially meet the new requirements. Changes were also made in the composition and procedures of the MECS bidding committee. There were delays while the new committee members and the printer-bidders familiarized themselves with the changes.

Institutionalization

The project's most serious problem was the legal structure providing for a permanent textbook agency. By the end of the first phase, the project had the essential elements of an institutionalized textbook provision scheme: a pool of trained curriculum researchers and writers, a professional publishing staff, and national networks for distribution, teacher training, and evaluation. What remained was the legal mechanism for perpetuating the institution. After three organizational-financial studies, persistent follow-up by project managers at government offices, and the encouragement of a new but sympathetic education minister, on May 31 1985, the temporary project unit TBS became the government's Instructional Materials Corporation.

Why Textbooks?

From the turn of the century, textbooks have been part of Philippine public education.[2] U.S. books, however inappropriately, were used until they were replaced by Filipino-authored texts in English; the first series, *Philippine Readers* by Camilo Osias, appeared in 1918. Educational publishing by Philippine companies started in the mid-1920s and flourished immediately after World War II. In 1958, the textbook publishers formed a nationalist association "to meet the challenges of educational book publishing . . . with books written by Filipinos for Filipinos and of the Filipinos." The use of foreign books continued, however, in some schools.

In the 1960s, with acceleration of economic activity a high priority, the government adopted educational policies that encouraged the training of the middle and higher levels of agricultural, industrial, and scientific manpower immediately needed in production. But although basic education received less official attention (and funds), the production and purchase of locally written, locally produced textbooks continued under a project assisted by the U.S. Agency for International Development (USAID).

The shift in policy toward strengthening basic education in the mid-1970s was guided by the government's 1970 survey, which noted the continuing deterioration in the quality of education and uneven quality of existing textbooks (Philippines 1970: 141–42):

> There are no consistent standards followed for the writing and review of textbooks and teaching materials in the public and private schools . . . All textbooks used in the elementary schools are locally produced. However, the use of imported textbooks with non-indigenous contents at the secondary level is still prevalent. This . . . will continue as present capacities of local production of textbooks are inadequate.

Responding to these findings, the task force created in 1972 to oversee the national reform program found that both the quality of education and the supply of textbooks in public schools were critically low. The clamor for textbooks was universal among teachers, principals, and supervisors.

The main intervention was thus identified. The deterioration in educational quality would be arrested at the root by reintroducing textbooks from grade 1 up. The first step in that direction was taken in June 1975 when, at the government's invitation, a Unesco mission arrived in Manila to assist the education task force in the preparation of a loan-free textbook provision scheme.

The Government as Publisher

The decision that the government assume the role of educational publisher was influenced by the environment for private publishing in the mid-1970s. For one thing, the early successes in public administration by a newly installed martial-law government increased confidence in the government's ability to undertake development projects, even those traditionally in the private sector. For another, the innovations in textbook development needed for large-scale production were either unknown or too costly for private publishers.

Environment for Private Publishing

The government diagnosed the twin problems of poor educational quality and the shortage of instructional materials to be of such crisis proportions as to necessitate an immediate, massive, and systemwide solution. But the government was not confident that the private sector could supply the instructional materials of the needed quality and quantity.

Under the existing adoption policy, the Ministry of Education's board on textbooks would issue a call to private publishers for the supply of textbooks for certain subjects and grades needed for a particular school year. The textbooks provided by these publishers were eval-

uated by curriculum specialists and other educators: the top-ranked title was adopted for use in all public schools, the next-ranked recommended as a supplementary text. Multiple adoptions were not unusual, however, with up to three titles from various publishers approved as standard texts for a subject at a given grade level. The approved titles then were purchased in bulk and distributed by the government. The books were loaned to students free of charge.

The consequences of this adoption practice were often deleterious. For example, in one subject different textbooks would be purchased from different publishers for different grades. Thus students were not assured that their books next year would come from the same series as their books in the current year. As a result, there was neither continuity in the treatment of subject matter from one grade to the next nor lateral linkages among subjects of the same grade; there was no progression in levels of difficulty, no coverage of related topics, and no further development of concepts and skills taken up in the previous grades.

Compounding this situation was the fact that the books generally were of poor quality. The titles available from private publishers in the mid-1970s were vintage 1960s—they had been developed during the previous textbook project. Text and pictures were at least ten years old and no longer reflected up-to-date, basic knowledge about art and literature, politics, science and technology, or the more effective approaches to teaching these in either elementary or high school. As the books had never been tried in schools before they were adopted, there existed little empirical evidence of their effectiveness in the typical Philippine classroom.

Although the printing industry had the capability to produce sturdy textbooks, lack of quality control, scarcity of foreign exchange (which prevented local companies from importing good paper, ink, thread, staple wire, and glue), and the government's protectionist policies for the local manufacture of these materials all contributed to a decline in the physical quality of the Philippine-made book. For its part, the government maintained flexible standards in accepting the books bought from traditional suppliers.

Another problem was inefficient procurement. Because of dwindling funds and ill-defined standards for textbook adoption, the free-for-all competition among approximately twenty publishers for large government orders was intense and at times unfair. Amid rumors of influence peddling, price fixing, and unlawful commissions, the supply of textbooks to public schools became irregular and their quality and price suspect. (The government abolished the board on textbooks in 1974 and suspended all book purchases. It established a new textbook board in 1975.)

Available Public Resources

By contrast, at the start of the first phase of the textbook project the government had at its disposal the key resources for an immediate response to the textbook crisis: copyright protection, manuscripts ready for publication, and duty-free importation of paper.

Infringements on copyright would obviously be averted if the government were to use materials originated by its own agencies. This was an important consideration because manuscript development could suffer delays while permission was being sought from copyright owners. Nevertheless, the textbook project adopted a policy that permission would be secured for the use of copyrighted materials in the new textbooks. The project staff was in fact occasionally delayed in manuscript preparation while locating copyright owners, waiting for their written consent, or writing new material because the owners never replied, posed unacceptable conditions, or refused permission.

The reluctance—especially among publishers in the international trade—to negotiate rights and permissions was not surprising in the light of Philippine reprinting laws enacted in 1973–74. These legalized the commercial reproduction of any exorbitantly priced book (unilaterally determined at $3 at the time) even without the original owners' consent. The Philippines was not a member of any copyright convention at the time.

Materials written by staff of the government, and therefore legally unencumbered, were available as manuscripts. At least three government institutions had been developing instructional materials, some of which had already been field-tested before those institutions were designated curriculum centers for the project.

For those materials (many in science and math), the first two years of writing and field-testing could be skipped, and production could begin soon after the launching of the project. This would still conform to the three-year textbook development cycle prescribed in the original project design. By contrast, the estimated minimum time needed by the private sector to provide new materials was six years.

To integrate development activity, the government put the project under the supervision of the Textbook Board and assigned national appropriations traditionally allotted to the purchase of textbooks to be the Philippine counterpart to the World Bank loan. To facilitate the development process, the government ruled that the materials developed by the curriculum centers would automatically be approved by the board.[3]

Paper for book printing is available in the Philippines but is generally priced higher than most other paper products. This is because printing papers are either imported or locally manufactured from imported soft-

wood pulp. (The country does not produce pulp because forest trees, although abundant, are unsuitable for papermaking.) The government also protects the local papermaking industry, levying high duties on imported paper. In the mid-1970s, local prices for imported paper were at least 50 percent higher than international prices.

Because paper was thought to comprise about 50 percent of the unit production cost of the book, the government saw substantial economies in buying international-quality paper stocks at international prices. The government had the facility for such procurement because the educational development law of 1972 specifically granted tax exemption on the government's importation of materials and equipment needed for such programs. (This kept costs at acceptable levels, for in 1981 paper was assessed to be 73 percent of unit production cost.)

Impact on the Private Sector

The government recognized the risks involved in virtually shutting the private sector out of production in the textbook project but justified its action on the basis of its need to provide materials immediately and on its belief that only it was large enough to undertake a systematic change in the provision of books. It sought to minimize those risks by engaging the private sector as providers of many graphic supplies and services, including book design, paper, printing, binding, packaging, and distribution. (Recognizing the problems of managing printing presses, which could distract from the main business of developing textbooks, the project itself did no printing.)

Indeed, throughout the project, huge contracts were awarded to many private firms. As many as twenty titles were in preparation at any given time, providing employment for scores of artists and craftsmen as type was set, illustrations were drawn, pictures researched and taken, pages made up, and final film of entire books developed. Paper procurement averaged 5,000 metric tons yearly, and print orders ranged from 15,000 copies of teaching materials for high school to 1.3 million copies of grade 1 textbooks, occupying dozens of printers for months on end. Distribution volume was 30 million books a year, providing year-round business to land, sea, and airfreight forwarders.

Nonetheless, private publishers looked on the project with suspicion and hostility. Relegated to the role of mere printers, they were deprived of the opportunity to sell textbooks developed by their respective houses. They protested the government's automatic approval of its own manuscripts, a policy which—they argued—placed private publishers in an uneven contest with a government that was both player and referee at the same time.

The publishers also argued that, with the government producing its own books and assigning funds for production rather than purchase, publishers would be left with only the small private-school market for their books. While acknowledging that the government's large-scale provision of textbooks would promote reading and subsequently create a large book market at no expense to private publishers, they said that the loss of the lucrative textbook trade would deprive them of the margins needed for investment in riskier trade books (literature, nonfiction). It was ironic, they felt, that the project's short-term gain of teaching the population to read would be lost in the long run because a publishing industry so endangered by a government takeover could offer little to the new readers.

The government sought ways of enlisting the participation of publishers in the textbook project. Because book purchases (which the publishers essentially demanded) were not possible under current policies and World Bank loan obligations, the government explored the private sector's interest in reprinting and copublication.

In response to queries by parents and private-school heads who wished to purchase project textbooks, in 1977 the Textbook Board made available the rights for the reprinting and commercial sale of these textbooks. Exclusive rights were granted after public bidding among publishers for the lowest selling price they would offer the public. The board approved the price and required a small royalty to be paid to the textbook project (which shared the royalty with the curriculum centers). Although the response was generally good, many reprint editions remained unsold, the publishers later complaining that bidding depressed prices unnaturally. Consequently, in 1982 the board waived bidding formalities and simply required a fixed fee and its approval of the selling price. The publishers realized much better sales under the new arrangement, but by 1984 the selling prices for the reprinted books had risen substantially. This defeated the project's desire to make available commercial editions that were inexpensive because (except for the nominal reprinting fee) no development cost needed to be incorporated in the selling price of the book.

In 1980, the Textbook Board selected several publishers' titles from its approved list and referred them for production and distribution under the project. For the limited rights to a government edition of the selected books, the project paid royalties based on manufacturing cost, because the loan-free, not-for-sale books did not have the list price used by publishers to determine royalty fees. In addition, the project provided the

publishers with editorial and design advice and attached no further rights to the books so that the publishers could market identical editions commercially.

The board determined that the privately published books were appropriate for about 25 percent of the public schools, considering the teaching approach and the coverage and level of difficulty of subject matter. That meant that 600,000 copies of upper-elementary social studies texts and 60,000–80,000 copies of high school language texts could be sold—a bonanza for an industry in which a publisher's typical inventory was about 5,000 per title and anything surpassing 20,000 copies was a bestseller.

The entry of private publishers' titles in what had been a single-title system created serious problems for the project, however. Questions regarding continuity from one grade to the next, the shortcoming of the preproject procurement system, were raised again. Two separate biddings for printing had to be held, one for the project title, the other for the new entrant. Distribution plans had to be revised to ensure that the second title reached the 25 percent of schools which the board determined were the appropriate users. The work of teacher-trainers effectively doubled with preparations for the orientation of teachers on the effective use of one or the other book. But the most surprising feedback came from teachers themselves. In various teacher-training sessions held before the introduction of the new texts, teachers and local education authorities formally protested the entry of a nongovernmental text, rating it inferior to the government's own and calling the practice contrary to the project's purpose of equalizing educational opportunity through a standardized educational service. To placate the teachers, the board ruled that the government's title would be used as the standard text in class and the private title at the teacher's option.

The next attempt to engage the private sector was in 1982, at the start of the project's second phase. New leaders of the MECS (assigned by the minister to oversee the education task force which supervised all foreign-assisted projects) abolished the curriculum centers as project institutions. The ministry then called for manuscripts from the private sector to support a new curriculum for grades 1 and 2 in 1983 and 1984 respectively.

The move was badly timed because, in 1982, the MECS was not yet ready with the details of the new curriculum. The private publisners, already wary of government initiatives in educational publishing, waited until the manuscript preparation guidelines were finally issued—by then too late for any meaningful textbook development, despite several extensions in manuscript submission dates. The Textbook Board, directed to evaluate the submissions, noted the poor quality of the materials and demanded that they be field-tested in accordance with policies guiding the textbook project. This threw the availability of the new materials further out of phase with the new curriculum. And the textbook project, under pressure to provide the new curriculum with materials, discarded its three-year development cycle, hastily revised titles from its backlist, pressed editors to compile some student workbooks and teachers' guides, and then rushed to press with materials of undetermined quality.

The Future of Government Publishing

With the appointment of a new education minister in 1984, the textbook project regained its cohesion and some of its momentum. It was also expected to assume a greater role in policy formulation and management of the total educational materials subsector. To rationalize its publishing schedules, the textbook project negotiated with private publishers to buy the rights to their materials for grades 3 and 4 for publication in 1985 and 1986 (when the new curriculum would be introduced in those grades). The project also revived its three curriculum centers and identified two more (the MECS national language institute and the practical arts center of the state technological university) to ensure that development proceeded under the regular, three-year cycle for materials for grades 5 and 6 for 1987 and 1988.

To broaden its base of authors, in 1984 the project began a national contest for textbook writing open to all classroom teachers. The contest offered cash awards at local, regional, and national levels to the teacher-authors and to their sponsor-administrators. Although the initial response was disappointing, more participants entered the following year, giving the contest organizers confidence and optimism for the future.

The project also embarked on the development of other, nontextbook elementary-level materials financed by the World Bank. The first of a series on Philippine regional folk culture (customs, literature, music, arts and crafts) appeared in 1984 designed as curriculum enrichment material for teachers of social studies. Production work was under way in 1985 for a portfolio of Philippine paintings for school use, posters for homeroom arts, and manuals for physical education. A two-volume children's encyclopedia (one volume in English, the other in Pilipino) and a 10,000–entry high school dictionary in Pilipino were being written and designed.

It is difficult to tell which course government textbook publishing will take in the immediate future. The energetic education minister, at whose initiative the textbook project finally became a state corporation in 1985, began many activities to develop instructional

materials for the public schools. In addition to ordering diversification in the development of educational products, he secured presidential authority requiring that all purchases of instructional materials out of national and local funds be made only by the new state corporation. This effectively made the corporation the government's central procurement agency, which would deal with private suppliers for items not produced by the corporation. The same authority exempted the corporation from import duties (mostly on paper) and provided for hiring consultants, shortening procedures for higher-level approval of the corporation's contracts, and regular government budgeting to provide instructional materials beyond the World Bank loan. A noteworthy provision was that the corporation should not venture into printing, recognizing the pitfalls of a government office printing plant and as a concession to private interests. Nevertheless, the provision allows government printers to bid on the corporation's printing jobs.

The overall direction, therefore, has been toward much greater government involvement in the provision of instructional materials, with no change in private participation. Private publishers may well regard the corporation as taking over textbooks and all other instructional materials. They may also see an opportunity to return to the days of persuasive lobbying of a single governmental unit—the very corruption-prone procurement practice that compelled the government of the mid-1970s to overhaul the system in the first place. The new government which took power in February 1986 could, however, alter that direction, given its concern over the country's heavy international debt and its election promise to revive economic activity through the revitalization of private initiative. Indeed, change has begun: the education minister has been replaced.

Institutional Issues

In 1975, the Textbook Board was reestablished. The chairman was appointed by the president of the Philippines, as were four members: a science and mathematics educator, another educator representing the country's many cultural minorities, a famous artist, and a publisher representing the private sector. The directors of elementary and secondary education were ex officio members. As an extension of the education minister's office, the textbook regulatory board set national policy and evaluated and approved textbooks submitted by publishers for use in the public school system.

The project was launched in July 1976 with the establishment of the Textbook Board Secretariat (TBS). Because the project was financed by a World Bank loan, the TBS was initially attached to the education task force—an extension of the minister's office overseeing externally aided projects. The functions and authority of the Textbook Board were expanded in 1979. The board was given authority to receive and disburse budgetary appropriations, enter into contracts and agreements, and appoint and discipline personnel. The TBS was then administratively transferred from the task force to the board.

The board met regularly, and TBS managers were frequently invited to the meetings as resource persons. As resignations reduced the membership over the years and no new appointments were made, the board eventually functioned with only an acting chairman and two members. Staff support for the board was provided by the TBS. As governing body for the TBS, the Textbook Board reviewed all operating policies and budget proposals and approved annual plans and reports, contract awards, modifications, and extensions, and personnel appointments, promotions, and sanctions. All contracts and appointments were under the name and signature of the board.

TBS Organizational Structure

Headed by an executive director, the TBS had a staff of 130 in 1981, counting among them 67 professionals organized into five operating divisions and two (later three) support offices. The chiefs of divisions and offices constituted the senior staff, which, headed by the deputy director, met weekly with the executive director to set and review operating policies, procedures, and performance. The same body met annually as a planning committee. Together with chiefs of sections, the committee evaluated the previous year's performance, set the coming year's targets, and prepared detailed plans and schedules. Members of the senior staff also formed working committees to handle various management tasks and staff services· personnel screening, staff performance ratings, office purchases, technical assistance, and sports and cultural activities.

In late 1983, the TBS moved to its own site in Quezon City, Metropolitan Manila. On a two-hectare lot leased from the state university, a seven-building complex was designed for TBS operations and built under the World Bank–financed project.

Formation of the Instructional Materials Corporation

During the years 1977–81, the TBS commissioned three studies by private management consulting firms and by the government's own audit commission to determine the appropriate legal and financial structure that would make the textbook project a continuing government activity. The first study identified the options: ministry bureau, commission, state foundation, or state corporation. The second study prepared various finan-

cial scenarios and recommended the corporate form because a corporation would free the central government of the financial burden of supporting the textbook unit after the initial provision of capital; it would also enable the new unit to operate with the financial flexibility required for textbook development. The third study detailed the corporation's organization and functions, suggested mechanisms for transferring appropriations, property, and personnel from the project to the corporation, and prepared the draft presidential executive order that would effect the change.

The executive order provided for the abolition of the Textbook Board and the creation in its place of an instructional materials council chaired by the education minister. The council would regulate the introduction of textbooks as well as all other forms of learning materials. The order also provided for the creation of the government's proprietary corporation for instructional materials, with a board of directors also chaired by the minister. The order was signed by the president in 1982 but not released, presumably because the government was not yet ready to commit funds for corporate equity. In late 1984, the order was finally issued. With the help of the presidential commission on reorganization, enabling memorandums were drafted, and administrative negotiations were held with the Civil Service Commission and the budget ministry. In May 1985, a presidential letter of instruction operationalized the Instructional Materials Corporation (IMC).

Publication Planning

The education task force which prepared the textbook project designed the three-year textbook development cycle with the aid of a PERT (program evaluation and review technique) network diagram, an instrument familiar to construction engineers. The diagram was then redesigned, with its useful features intact (critical path, parallel activities, duration of activities), into a simple Gantt chart (essentially a bar graph across time) more easily understood by laypersons.

To show a textbook development cycle, the bar charts were further simplified, with the main activities color coded so that an entire textbook series for one subject area could be displayed on a page. These handy graphs were used extensively in discussions within TBS managers, the Textbook Board, the curriculum centers, the task force, the minister's office, and the budget authorities at the presidential palace. Changes in the chart for a particular title needed the director's approval.

To derive a textbook availability schedule, the quantity needed of each book was recomputed with the help of the statisticians at the distribution division. The enrollment during the expected year of distribution was taken as the basis for the new estimate. The numbers were tabulated on a large sheet by title and year of printing to make an eight-year schedule of textbook availability. (The staff called it either the "blue schedule" because it was blueprinted or the "mattress" because of its size.) It showed the printing targets by title, year, and type of book. It also showed the years when a title would need to be reprinted (the third year) and when its revised edition would be needed in the field (the seventh).

Although annual work plans were often modified because of schedule slippages and newly emergent needs, the blue schedule was never altered. The staff used it as the fixed point of reference for reckoning adjustments to their many subsidiary plans and estimates—paper consumption, bidding schedules, distribution alternatives, and cost projections.

Manuscript Origination and Preparation

Project Criteria

Plans prepared by the education task force determined the scope of instructional materials development to be undertaken by the textbook project. Textbooks would be developed for the courses in science, mathematics, social studies, Pilipino, and English which are required by the official curriculum for the six elementary grades and four high school years of the basic educational system.

Instead of having several texts of graduated reading levels or having altogether different texts for the same subject in one grade level, the concept of a single textbook aimed at the average student was preferred. It simplified the task of rushing books to a book-starved system. It also democratized access to educational opportunity: every Filipino student, wherever he or she lived or moved, would find the same text in any public school. But because the teaching of reading and grammar in the two languages required more material than the other subjects, the plan provided for double volumes in some grades (primer-and-reader set in grade 1 for Pilipino, reading-and-language companion volumes for both English and Pilipino in grades 3–6) The texts were the property of the school and loaned free to students. Because many classrooms used two-seater student desks, a single text per subject could be shared by seatmates.

Having textbooks per se was not new; by training and tradition, teachers expected them in class and knew how to use them. The educational innovation was that the textbooks were systematically supported in the following ways:

- The textbooks were planned in complete series,

from grade 1 to fourth-year high school. Content was based on the curriculum and arranged according to a master scope-and-sequence chart.

- Specialist teams (rather than individuals) wrote the texts. Moreover, the teams were affiliated with established educational institutions, guaranteeing continuity in content and phased improvement of the same content over several editions.
- Each text was accompanied by materials for the teacher in the form of a teachers' edition, manual, or guide.
- The materials were tested in actual classroom conditions to ensure their appropriateness to all parts of the country before they were printed and distributed. In other words, the users participated in the development of the new materials.
- Teachers were trained in the effective use of the new materials.
- The new materials were evaluated, and improved editions were developed on the basis of the evaluation.
- The new books and teacher materials were attractive and sturdy and were continually resupplied through a national distribution network managed by a permanent publishing institution.

Language of Publication

Following the bilingual education policy adopted by the Education Ministry in 1974, which prescribed Pilipino and English as the media of instruction, the new textbooks in science and mathematics were in English; those for social studies, in Pilipino. (Spanish, the third official language of the Philippines, is optional in some private-school secondary curriculums and required in tertiary-level degree courses.)

The Curriculum Centers

Five institutions were identified as curriculum centers and given the responsibility for originating manuscripts for publication by the textbook project. These centers were not new creations. All were existing research and development units, mostly of state universities, and a few had participated in previous projects of the ministry's task force.

The curriculum centers had among their ranks graduate-level educators and social scientists, many with teaching and publication experience. The centers also contracted writers and artists as well as classroom teachers for specific projects. From these resources, the textbook writing groups were formed. Within the three-year textbook development cycle, the curriculum centers were responsible for curriculum research and development, manuscript planning and writing, field-testing, and manuscript revision on the basis of the results of the testing.

Of the five participating institutions, three were designated to write manuscripts for the five academic subjects for which textbooks would be developed. The first, the science education center of the state university, had been developing instructional materials in science and mathematics since 1965 and producing and distributing them in limited quantities through the commercial book trade. In 1973, the center came under the assistance of a World Bank–financed education project. A new building was constructed for the center, and many of its curriculum researchers and textbook writers were sent on degree fellowships abroad. By 1975, its science and mathematics series for elementary and high schools had been field-tested and were ready for revision and subsequent production

Also assisted by the Bank-financed project, the second center was a unit of the ministry working in the subject area of social studies. By 1976, this group had written an elementary series and was ready to field-test its first three grades.

The third curriculum center—for language studies—operated out of the state normal college. When the textbook project started in July 1976, this language study center had already written and field-tested its manuscripts for Pilipino grades 1 and 2 and had prepared manuscripts for English grades 1 and 2 for field-testing.

The two other institutions, one based at the state technological university, the other at a provincial state university, conducted research and developed pilot materials in work education and agro-fisheries for high school. Upon the completion of their work in 1979 and 1981, these two centers were phased out because their materials were not included for production under the project.

Within the three-year textbook development cycle, the curriculum centers were responsible for curriculum research and development, manuscript planning and writing, field-testing, and manuscript revision based on the results of the testing. Planning and writing included the analysis of the curriculum to derive the concepts and skills to be treated in the textbook and place them in a logical order on a scope-and-sequence chart. The chart guided the author teams in estimating the written material each concept required and the interrelations among the concepts. On the basis of the chart, the outline of the book was prepared and the units and lessons of the text were written accordingly.

Frequently, the author teams went to a classroom—usually a laboratory class at a teacher-formation institute—to "minitest" a draft lesson or exercise, and then revised it on the basis of first-hand observation. The

planning and writing stages were scheduled to take one full year.

For the field-testing, educators at the curriculum center identified a sample of forty schools representing the country's cultural and linguistic regions and rural-urban settings. The curriculum centers prepared the tryout sites and oriented the teachers on the use of the experimental materials. (The TBS contracted for the printing of a limited edition and sent copies to the chosen sites.)

During the tryout period, author teams made periodic visits to observe classes, interview teachers, parents, and pupils, and collect other data. The information was analyzed and used in revising the manuscripts. The entire field phase was designed for one year: the ten months of the academic year (June–March) and two months thereafter for feedback and manuscript revision.

With the use of the feedback, revisions were made. The revised version was reviewed by specialist consultants, who made further improvements. Then the manuscript was submitted to the managers of the curriculum centers for approval and transmission to the TBS. The curriculum centers also undertook educational research on topics related to instructional materials—for example, how to develop science materials on the basis of community needs and resources; how learning disabilities could be traced to language; and how to identify concepts of nationhood for social studies lessons.

Editorial Functions at the TBS

The TBS editorial division was responsible for the timely acquisition of manuscripts from the curriculum centers (or occasionally from private publishers and individual writers) and for their processing for publication. All manuscript work, including conferences with authors, was the responsibility of editors. For each subject, there was at least one editor, usually a graduate-level education specialist with teaching and writing experience. The editors were assisted by copy editors (who performed the more technical tasks such as copyreading, marking copy for typesetting, and checking artwork and photographs) and by editorial assistants (who researched illustrations, read proof, and coordinated the movement of materials in and out of the division). In 1981, the division was headed by an editor-in-chief and had a staff of eighteen in the editorial pool and the field-testing section. Editors helped the curriculum center authors with planning and writing, fieldwork, and manuscript revision, reviewed the content of and edited the manuscripts, and prepared final manuscripts for production.

The editorial division dealt directly with the curriculum centers. It received annual proposals from them detailing the textbook titles to be developed during the year, planned activities, and estimated costs. The division reviewed the proposals, set the standards of output (especially number of manuscript pages and percentage of illustrative material), and the submission dates for each manuscript. These were discussed with the curriculum centers.

Upon reaching consensus regarding scope, scheduling, quality, and cost of the year's work, a memorandum of agreement—the legal basis of all transactions between the TBS and each curriculum center—was drafted. The memorandum contained all of those working details and specified the amounts and timing of the financial assistance to the curriculum center from project funds.

Upon receipt of each manuscript from the curriculum center, it was reviewed by an editor, who considered the following:

- Compliance with the requirements of the curriculum
- Soundness of the teaching approach
- Consistency in the scope and sequence of material
- Suitability of the concepts, suggested activities, vocabulary, type size, and illustrations to the aptitudes and interest of the target student
- Length of the text—adequacy of material for one school year
- Relation of the text to the accompanying teachers' guide
- Accuracy of information
- Consistency in style and presentation.

After the tryout, the manuscript was reviewed in light of the new revisions. The complete manuscript was copyedited, typed in final form, and sent back to the curriculum center for a last reading by the authors. The TBS required written notice from the center that the manuscript was ready for production and that all permissions for copyrighted material had been secured.

The division was also responsible for seeing each book title through the entire production process—from typesetting and proofreading through illustration, dummying, and assembly of camera-ready pages. Editors checked and approved all materials sent to printers as well as those sent by printers (blueprints, color proofs, and the like).

In a publisher's capacity, the editor was involved in almost all publishing processes, from planning and scheduling through printing and teacher training. The TBS recognized this key occupation by refining the job description, making editors' salaries higher than those of all other staff, giving the editorial division priority

in hiring, and awarding the greatest number of staff-months of overseas fellowships under the project to editors needing further training.

Problems in Textbook Development

In ten years of implementation, the project was confronted by many problems: textbooks were not matched to the curriculum, manuscripts were poorly written, the tryout was unmanageable and its results useless, manuscripts were late, and reliable manuscript sources were lost. Measures taken to resolve these problems had mixed results.

Textbooks Not Matched to Curriculum

Considering the MECS to be technically inadequate, the planners of the project assumed that curriculum development and textbook writing would all be done at the curriculum centers independently of the ministry's bureaucracy. Throughout the first phase (1976–81), therefore, the project and the curriculum units of the elementary and secondary education bureaus had little contact with one another. Just as the first project titles were being released in 1977, the elementary education bureau issued a list of learning competencies requiring strict compliance by teachers. This made teachers reluctant to use the new textbooks because they feared that the materials were not consistent with the competency list.

Further, in the rush to publish textbooks within tight project deadlines, there was little coordination among curriculum centers—or, for that matter, among writing groups within the same center working on the same subject but in different grades The result was inconsistent emphasis on important concepts and skills in several subjects and grades.

Because they were developed without guidance by the MECS curriculum authorities, the textbooks were in fact not very well synchronized with the official curriculum, although the project ensured that most curricular objectives were covered by the new materials. It took three rounds of teacher training to convince the field that the new materials met the minimum curricular requirements, although not always in the sequence prescribed by the bureaus.

Effective and regular contact between TBS editors and the MECS curriculum researchers was established only toward the close of the project's first phase in 1981. At that time, the first editions of 1977 and 1978 were being reviewed for reprinting, and preparations were being made for the elementary program, which included a new curriculum and a follow-on textbook project. Meanwhile, lateral linkages among subjects and coherent scope-and-sequencing within a subject remained pending issues.

Poorly Written Manuscripts

Among the review criteria, editors paid special attention to reading level. Measuring readability and controlling vocabulary were easier in the better-prepared manuscripts in English because the curriculum center for science and mathematics had had at least ten years' experience in research and publication. During the project, the center was also developing a standard, graduated science vocabulary for Philippine schools. For the manuscripts in reading and language, the editors employed the Frye and other readability formulas to determine levels of difficulty.

There was no comparable instrument for gauging the reading level of the manuscripts written in Pilipino. The social studies curriculum center coined new phrases because it was the first time that Pilipino would be used to teach that subject. The TBS had to rely on the curriculum training and teaching experience of its more senior editors to resolve questions of reading and language about which there were few precedents and little authoritative research.

There was disagreement between the TBS and the curriculum center for languages because nonstandard spelling derived from the center's linguistic research was used in the Pilipino manuscripts. (For example, the word for "coconut," traditionally spelled *niyoq*, was rendered *nyoq*.) The TBS objected to the new spelling because it might confuse readers, especially in non-Tagalog-speaking provinces.[4] The TBS also believed that textbooks should contain established, not experimental, knowledge. Consulted on the question, the national language institute advised that while the center's research was valid, the traditional spelling should be preferred because it was more commonly used. The Textbook Board subsequently prescribed the traditional spelling for textbooks, and the manuscripts were altered accordingly.

A very evident failing of most manuscripts developed by the project was bad writing. The stories were dull, the situations forced and clumsily narrated. Illustrative examples given in the text often obscured rather than clarified the concept being taught. The teacher's guides read like a cookbook, with numbered step-by-step procedures written in telegraphic prose or with a script prescribing in unnecessary detail the teacher's every move in the classroom.

In salvage operations, editors rearranged and occasionally rewrote whole chapters to improve organization. When there was time, they also looked for other stories with similar pedagogical objectives and content to replace the uninspired ones in the manuscript. They

pruned the text to tig' ten it, enlivened the page with better-conceived illus' ations, and included more "fun" activities. The edito s were concerned that the rigid adherence to curric' lar prescriptions shackled the writer's imagination; as a result, the textbook generally failed to stimulate the student into the joy of reading. Once, after scanning a manuscript, the executive director (himself a science journalist and short-story writer) remarked that the project textbook was as correct as the telephone directory—and as interesting. The conservative authors were not amused, however. They regarded the late-coming editorial suggestions as unknown quantities that had not been field-tested or, at best, as interesting but dis'racting and therefore unnecessary.

To improve the manuscripts, the TBS engaged as editorial consultants some known writers of children's literature. But even they could do very little, ranged against the committees of curriculum center experts. Thus misperceptions about the role of writing for textbooks persisted throughout the project period. When the follow-on project was being planned, the TBS included the curriculum center writers among the recipients of training fellowships on textbook writing under the project's technical assistance program. It was hoped that over the longer term, exposure to good writing and good writers would give the authors a more enlightened perspective on their creative responsibilities.

Unmanageable Tryout with Useless Results

The original high schools that the project plan had identified to pilot test the newly written textbooks did not actually play an active role. The curriculum centers (and later the TBS) made their own arrangements with other schools for reasons of national representativeness, accessibility, and availability of experienced tryout teachers and cooperative administrators. As stated in the World Bank's Project Completion Report (hereafter PCR), however:

> Concentration on determining achievement gains of children using the experimental textbooks resulted in complicated instrument development for pre-post testing and complex data analysis of achievement tests. Consequently, very little useful data [were] gathered on such formative aspects of the try-out as appropriateness of reading level, adequacy of content for one full year, teachers' difficulties encountered in the use of the books and their suggestions for improving the material. With the 40 classrooms randomly selected, visits to try-out sites proved very difficult, and feedback data for the studies could not be gathered and analyzed in time to help authors and editors with manuscript revision.

By 1979, a field-testing section composed of a special educator and an educational researcher had been organized at the TBS. With the help of a consulting expert in manuscript development, the tryout scheme was modified, with the TBS taking active management of the process. The sample was reduced to a minimum of twelve more easily accessible schools, without sacrificing representativeness of location or language. The tryout objectives were redefined so that TBS editors could go to the tryout sites frequently and gather feedback directly from teachers who previously had preferred not to be frank with their comments lest they offend the visiting authors. Questionnaires were simplified, and the teachers were given an extra copy of the book and instructed to write their marginal notes immediately after teaching a lesson and to mail the tried-out pages using the self-addressed, stamped envelopes provided by the editors. These changes proved satisfactory in that lesson- and page-specific reactions were quickly gathered, and the tryout and revision processes proceeded thereafter on more predictable schedules.

Late Manuscripts

In spite of a rationalized field-testing process, manuscript revision still suffered serious delays. These were traced to complicated procedures at the curriculum centers for consultants' review and managers approval of the textbook manuscripts. Further, after sending the manuscripts to the TBS, authors were reluctant to agree to improvements suggested by editors, knowing that new alterations would mean another round of consultation and approvals, delaying the manuscripts even more.

The consequences of the delays were costly for the project. The subsequent production stage could not be planned. The procurement of printing services by public bidding had to be rescheduled or forced to proceed on the basis of the very tentative and often-changing specifications of the unfinished textbook (number of final pages was most problematic). Printers who won bids could not schedule their machine runs for lack of camera-ready copy from the project.

Most serious, delivery to the preidentified teacher-training sites could not be assured. There had been times when the project had had to contract smaller quantities at higher cost and airfreight them to make training dates because the prime printer-contractor manufactured book pages in bulk and could not have complete copies. At other times, the project printed training copies from unfinished, error-laden camera copy. And sometimes teacher training proceeded with no books at all.

The solution to the problem of delayed manuscripts lay in the reconceptualization of the three-year devel-

opment cycle. It was found that the cycle, designed for calendar years, was out of phase with the school year, which began in June. The effective time available, therefore, was only two years and five months: not enough time for one full year of writing, another year for field-testing, and a third year for everything else—revision, production, printing, distribution, and teacher training.

The review of the development cycle also revealed that, just as all "downstream" activities—manufacturing, distribution, teacher training, impact evaluation—started in parallel (for example, preparation of bidding documents for textbook printing started even as production of camera-ready pages at the TBS had barely begun), it was also necessary that some "upstream" writing, field-testing, revision, and production be undertaken as parallel activities. Plans were therefore modified. Curriculum centers were persuaded to agree early with the TBS about specifications (number of pages, proportion of text to illustrative material, special graphics) and to submit parts of the manuscript at agreed points during the full-year writing period. In so doing, editorial work would begin earlier and problems of content and presentation be resolved as soon as they were detected from the partial submissions. Similarly, manuscript revision would begin during (not after) tryout as editors returned from field visits or as teachers in the field mailed back their comments. TBS production artists could also start their design studies from editors' sample manuscript pages. Consequently, the TBS adopted the operating policy of three full years of work on a textbook, with the availability of copies in school in June of the fourth year.

Loss of Reliable Manuscript Sources

In 1982, the Education Ministry abolished its own social studies center. The ministry also dissociated the textbook project from the two remaining centers (for science and mathematics, and for Pilipino and English) by ordering the TBS to halt the annual financial grants for curriculum research and manuscript development.

Although relations with some curriculum centers were reestablished in 1984 and some new ones were identified, the two-year break wrought damage to network building. The carefully cultivated confidence of the cooperating institutions in the central unit's ability to sustain development work was difficult to regain. In practical terms, some curriculum centers that had discharged their textbook specialists after the shutdown could not restart with raw recruits. Overall, institutional experience and memory had gone.[5]

With the TBS transferred into the cost-conscious corporate life as IMC, its relation with the curriculum centers would likely emphasize more business and less development. The luxury of subsidized curriculum research and development not directly imputable to the cost (and price) of the textbook would give way to contractual deals strictly for manuscript writing services. And the IMC—preoccupied with finding meaningful participation by the private sector—could well relegate the curriculum centers to the residual functions of providing technical consulting to managers or training writers of the publishing houses.

Production of Books

In 1981 the production division was headed by a production chief (who was concurrently TBS deputy director) and had a staff of eight graphic designers, artists, and photocomposition operators. Originally, the division had a copy section where production editors received the approved manuscript from the editorial division and took charge of all production-related editorial tasks: copyreading, marking up for typesetting, proofreading, and checking of all final pages and artwork. The arrangement caused conflicts with editors for the various subjects and led to confusion about authority and responsibility for projects. To maximize the subject editor's control over the manuscript and the book, the copy section was transferred to the editorial division in 1982.

The production division prepared the complete schedule for textbook projects; established criteria for determining the appropriate size of type, length of lines, book formats, color, illustration style and complexity of rendering, and other specifications of textbooks; designed all textbooks; and by assembling type and art, transformed the approved textbook manuscript into final book pages ready for printing.

Graphic Standards

Graphic standards were set in consultation with MECS reading specialists and benefited from experience gained during field-testing. Specialists at the manufacturing division were also consulted, especially on standards of printing quality.

For typography, serif typefaces, such as the Century Schoolbook and Times Roman used in many U.S. readers, were chosen over sans serif varieties. Serif faces were generally recommended in the literature on legibility. Type sizes were matched to the reading level of children. Text for grades 1 and 2 (ages 7–8 years) was set in 18-point type (one-quarter inch high). Because students learning to read were taught to scan meaningful units, text on a page was arranged in natural thought groupings. Words were never hyphenated, lines did not exceed 30 picas in length (about 5 inches), and paragraphs were always indented but not justified.

For grades 3 and 4 (ages 9–10), at which children normally would be reading confidently, slightly smaller 14-point type was used. Because spelling and dictionary skills were introduced in those grades, the book design allowed for end-of-line word breaks and justified text blocks. For the intermediate grades, 5 and 6 (ages 11–12), and for the first two years of high school (ages 13–14), 12-point type was prescribed. For the final two years of high school (ages 15–16), adult-size 10-point type was chosen, and in some books the type was arranged in double columns like that in some college textbooks.

Criteria for the quality of illustrations and photographs were evolved over time, as book designers distilled editors' criticisms and feedback from field-testing and teacher training. On the whole, simple line drawings in cartoon or naturalistic style were found appropriate for the lower grades; more complex compositions and photographs were used from the middle grades onward. This art policy conformed with the findings reported in the literature on legibility.

The illustrations were unmistakably Filipino (the executive director sent back to the drawing board any art showing children's hair other than black), realistic but reflective of cultural sensibilities (mother was always respectable, the elderly were always respected), and whenever possible avoided stereotyping (for example, girls also played physically strenuous sports).

The appropriate mix of illustrative and text matter differed according to the needs of the subject area and the grade level of the textbook. No prior prescriptions were adopted. Instead, workable criteria evolved during long planning discussions between editors and graphic designers as the former explained in detail the educational requirements of each textbook page and the latter reviewed every title from the standpoints of aesthetics and printing limitations.

After years of experience, it became evident that textbooks for the lower grades needed more and bigger illustrations than those for the upper grades. Science and mathematics books required more illustrations than those for other subjects, with more stringent specifications and more detail than those for the "freer" subjects of language arts. Photographs were effective and very necessary for textbooks in science and social studies. A rule-of-thumb proportion of art to text was adopted at the TBS (a range of 60–40 percent for elementary grades 1 and 2 through 20–80 percent for third and fourth years of high school) and was generally followed throughout.

With operational notions of text, illustration, and their mix, the production division was able to help editors set benchmarks for book length. The editors set 150 school days as the basis for textbook use in an academic year. This number was derived by subtracting from the prescribed 200-day calendar an estimated number of days lost to organization of classes at the beginning of the year, to local holidays and bad weather, and to year-end familiarizing of children with their classroom and teacher for the coming school year. The editors then prepared estimates of the material needed for the net number of days. Book designers translated the estimate into pages, considering type size, percentage of illustrative material, and format (the dimensions of the book).

An ascending scale of page numbers was eventually derived, with the lower grades having the least number of pages. The increasing quantity of matter by grade was matched not only by an equivalent increase in the number of pages but also by a decrease in type size, making it possible to fit more text in fewer pages. Increments were set by signature (that is, groups of sixteen pages) for economical use of paper and efficient printing.

The production division was conservative with regard to the use of color. Because of the relative inexperience of its staff, the first project textbooks were designed with straightforward text and simple line illustrations in one color (black). After about a year's experience, the first high school science textbook was designed in two colors. This became the tacit norm until full-color covers were introduced around the end of the project's first phase in 1981.

Responding to teachers' frequent suggestions that textbooks for lower grades should have more color to sustain children's attention, the reprint editions of the grade 1 texts in 1983 were done in two colors. In the same year, four-color experimental workbooks for mathematics and writing were pilot tested in a few schools.

Editors who observed tryout classes saw that children rushed through the exercises, took out their crayons, and colored the page. Seeing the opportunity to reinforce psychomotor skills, the tryout teachers suggested that some pages be left in black and white. The TBS redesigned the workbook for two-color printing, giving it the added use as a coloring book.

Work Flow

Production activities typically started with an editorial request for production services. Together with the request was a general description of the book to be produced, a copy of the manuscript (if the complete manuscript was not yet ready, representative pages showing all the required elements of the book were provided), and an art list specifying the essential details of each piece of illustration or photograph.

Planning. A planning meeting was held by editors, graphic designers, and manufacturing specialists. The content and preliminary specifications of the book were

discussed, and a production schedule was drawn up. The schedule was reviewed by the chiefs of the three divisions and approved by higher managers. The first approximation of the number of pages as well as other manufacturing details (including the date of availability of the finished pages) was given to the manufacturing division (which, as a parallel activity, would start the cycle of bidding for printing).

Design. The graphic designer analyzed the requirements of the book on the basis of the information supplied by the editorial planning meeting. He or she selected the typeface and type size appropriate to the age and reading level of the prospective textbook users and the special typographical features suggested by the editor, the book format that would accommodate those needs, the illustration style, and the number of colors warranted by the material.

Next, the graphic designer cast off the manuscript—that is, estimated the number of printed pages. A composition order giving all typesetting specifications was then drawn up. Under the designer's direction, graphic artists executed the book design in sample pages, which were from four to eight representative pages of the prospective book showing all its required elements—text and headings, style and quality of illustrations, special features such as charts, chapter dividers, and appendixes, and cover design studies.

A production meeting was subsequently called to consider the sample pages, discuss improvements, and refine the production schedule. During this meeting, the graphic designer explained the typesetting specifications so that the editor could mark the manuscript for typesetting. The agreed-upon design of the book and schedule were submitted to higher managers for approval. (In parallel, the manufacturing division issued bid bulletins to prospective printing contractors.)

Typesetting and Illustration. Production proper then began. The marked manuscript went to the photocomposition unit for keyboarding on its computer-assisted typesetting machine. The output on resin-coated galleys was photocopied in three sets: one for the editor for proofreading and two for the graphic artist for dummying. At about the same time, the free-lance artists and photographers were called in and briefed on the illustration and picture requirements of the book, and on the due dates for the contracted art services. The artists usually were required to prepare and show pencil sketches before executing final illustrations. They sometimes were also asked to do final inking or corrective adjustments and retouching at the TBS under the supervision of the graphic artist concerned.

The varying art requirements for the many textbooks being developed made the TBS adopt the operating policy that no illustrators would be hired. Instead, the production division maintained a file on free-lance artists and photographers for piecework contracting on demand. This enabled the division to avail itself of the many styles the artists offered: thoroughly researched technical diagrams for science, precise isometric drawings for mathematics, representational pen-and-ink sketches with local flavor for social studies, and freely executed cartoons and watercolor or paper-sculpted compositions for literature and poetry.

Photographs specific to a topic being treated in the text were particularly difficult to find. Photographers contracted to do location shooting for that purpose frequently returned with near-miss pictures. For a science lesson on dams, for example, one imaginative photographer turned in an impressive shot of a huge hydroelectric installation showing a massive dam with spillways. The editor liked the dam but said the spillways were a distraction because the lesson was about dams, not water movement. To solve the problem, an artist was hired to redraw the dam without the waterways.

Editorial and production assistants were sent out to museums and libraries, newspaper photograph morgues and advertising studios, and government, diplomatic, and international agencies to find photographs for the textbooks. At the office, correspondence on rights and permissions mounted as foreign publishers were asked to release pictures for TBS use. With pictures accumulating, a photograph file was organized at the division. But cataloging was rarely kept up-to-date, and the whereabouts of numerous prints and negatives were impossible to track because they were passed on to printers together with camera-ready pages. The file was eventually turned over to the TBS library.

Dummying. With one copy of the galley proofs and photocopies of illustration sketches, the graphic designer prepared a complete dummy of the book following the design agreed upon during the earlier planning and production meetings. The dummy showed all text and spaces for illustrative materials—and also empty spaces where text at present would not fit because of intervening headings or illustrations, pages where text needed to be cut to save space (as when the last four lines of a chapter wastefully occupied one full page), and other pages where the editor's requested matchup of text and art simply was not possible. Working meetings between the graphic designer and the editor were called to resolve all the problems seen in the dummy.

The dummy served two important purposes. First, it indicated whether or not the original production schedule could be kept, considering the amount of corrective work now evident; this was especially important to the manufacturing division, which needed a firm date for completion of reproduction proofs to set up schedules

with printers. Second, it "closed the book"—that is, the final number of pages could be determined from the dummy.

The dummy was corrected or revised and submitted to the chiefs of the editorial and production divisions for approval. Subsequently, the editor-in-chief confirmed to the manufacturing chief all specifications and the date reproduction proofs would be available. Thereafter, no alteration in the number of pages was allowed.

Mechanicals. Then came the final production stage: preparation of mechanicals. The original typeset galleys, now with proofreading corrections inserted, were assembled into two-page spreads with each text block precisely in place and with spaces for the illustrations filled with copies to show their final positioning. The original illustrations, usually drawn proportionately larger than the needed sizes, were now marked for photographic reduction and keyed to the pages. Together with the mechanical of the book cover and the box graphics, the mechanicals of the text pages and the artwork constituted the materials from which reproduction proofs (repros) and then printing plates would be made by the graphic-arts camera.

The repros were reviewed by the editor, designer, and a manufacturing quality-control specialist. The editor-in-chief reviewed and approved them for content, the production chief for design, and the manufacturing chief for printability. They then were released to the printer upon clearance from the deputy director.

For a straightforward teachers' manual, the entire production process took about three months. But for a complex high school physics or trigonometry textbook with a two-color text, full-color cover, many photographs, diagrams, and mathematical formulas, production from planning meeting to repros took nine months.

Problems

The TBS had international technical assistance almost from the outset of the textbook project in 1977. Among the foreign consultants contracted to help set up the new organization were a publishing manager, two textbook editors, a paper buyer, and a graphic designer. The designer, assigned to the production division, developed many of the forms and procedures for working with editors, book designing, typesetting, doing illustrations and photography, dummying, and making mechanicals. The production staff were trained to become book designers: to conceptualize the visual plan of the book, determine all specifications, estimate with confidence the book's physical dimensions so that bids for manufacturing might proceed, and prepare the book dummy.

No other services (or their attendant equipment) were considered necessary in-house. With a detailed composition order, typesetting could be bought: a complete art list was all that free-lancers needed to supply the appropriate illustrations and photographs: and a complete dummy would guide a piecework artist in making the mechanicals.

Trained TBS artists became the country's first technically oriented book designers. Some eventually moved to the private sector and influenced book design there. Others stayed on and trained the newly hired, increasing the local pool of new Philippine graphic artists. With trained designers, specifications and estimates of book length (the information needed to begin the long process of public bidding for textbook manufacturing) were made available early. It was not necessary to wait until the repros were ready to know how many pages a textbook would be in print.

The model for the production process—which essentially followed what was done in the United States—was clean and simple, but not all its elements worked well in Manila. For example, the detailed specifications for typesetting, written on a separate newly designed composition order, were unintelligible to Filipino typesetters unfamiliar with the latest U.S. typographic jargon. TBS designers had to accompany the manuscript each time a new typesetting firm was hired in order to conduct a seminar on interpreting the specifications. Later, some designers reverted to the Filipino practice of writing the type instructions in the margin of the manuscript.

Furthermore, the typesetters on contract were not very efficient. Project titles lay pending for weeks on end because the typesetters followed no schedules or would find no time to insert what to them were troublesome one-line corrections needed by the TBS. To solve this problem, the TBS reverted to its earlier plan of purchasing a small photocomposition system. When this was finally installed in 1980, typesetting outputs—and quality—became more predictable.

Purchasing art proved difficult as well. Government auditing rules required canvass bidding for the service, a rigid, quantitative measure hardly applicable to talent. Artists, for their part, were bewildered by the procedure and by the documentation they had to submit so that they could be paid. Worse, when artistic temperament and a glacial sense of time resulted in long delays, the artists' payment claims were questioned by the auditor, citing technical violations.

No satisfactory solution was found for buying art. The TBS continued to contract by canvass bidding because it needed a variety of styles for its many books and because there was no other legal way of securing the service. But it suffered from the delays. The problem

was reduced somewhat by inviting the illustrators on contract to do their work at the TBS offices. In this manner, some control over their schedule was possible.

The operating policy of not maintaining a staff of artists was reviewed. It was decided that although hiring artists as regular staff could not ensure that all art requirements in all the styles would be satisfied, at least the TBS would have more control over finishing a book in time. In 1982, the TBS started hiring illustrators in addition to graphic designers.

Conflicts also arose when editors felt that the graphic designers' formalistic page layouts missed a book's educational content and objective. For example, it is sound design to anchor pictures to the corners of the page or juxtapose them on a page facing the text; conversely, to present a lesson clearly the picture should be placed right below its text reference. The production division found the solution to be somewhere in between. The editors were taught the principles of layout and the technique of dummying. Following a design prepared by a graphic designer, editors dummied their own books to ensure that the educational concerns were met and then passed the dummy on to the designer for graphic improvements. In summary, efficiency in the production division was achieved not by the wholesale adoption of a system but by local adaptations of production concepts.

Like the writing, field-testing, and editing that preceded it, the process of production depended heavily on human initiative and judgment. But beyond the intellectual work, production had the burden of providing careful, personal craftsmanship which could not be rushed or shortened by mechanizing or merely adding more working hands; for the process required the concentration of an operator methodically executing a complex string of keyboard commands to set algebraic formulas in type, the delicate touch of a pen-and-ink illustrator crosshatching shadows on the rendering of an exquisite native basket, and the cutting knife of a graphic artist positioning with cross-hair registers a block of text precisely on a page. At the end of those labors was only one product: repros of the book, invested with whatever artistic imagination and taste it had been possible to capture under the pressure of time.

Manufacturing of Books

All responsibilities for procuring paper, printing, and binding were carried out by the manufacturing division. Headed by a chief, the division in 1981 consisted of a staff of thirteen organized in two sections: procurement and quality control (which operated a fully equipped paper-testing laboratory). When the TBS moved into its own office and warehouse complex in 1983, a small printing section was organized and attached to the division.[6] At the outset of the project, the first task of the division was to establish all the physical criteria for paper, printing, binding, and packaging. Execution of this task was guided by Textbook Board policies and World Bank loan conditions.

The board set a legal minimum life of six years for textbooks. This was considered a reasonable period for standard knowledge to be in use before it was rendered obsolete by new information or new curricular requirements. It also assured parents who bought books (mostly for use in private schools) that the books could be used by several of their children. With regard to the textbook project, the board ruled that the books would be school property, loaned free to students, used in the classroom, and returned at the end of the academic year so that they could be issued to the next batch of students. The textbook project adhered to those policies. The first textbooks were planned for a useful life of at least three years, with the possibility of one reprinting to extend their life for another three years before revised or totally new editions replaced them.

World Bank loan conditions provided that paper be bought through international competitive bidding and printing through local procurement, with foreign bidders allowed to participate. These conditions reflected the Bank's appraisal of the country's inability to produce book paper at reasonable cost and the local printing industry's competence and capacity to manufacture books.

Paper Specifications

Determining the qualities and grade of paper best suited to the purposes of the textbook project involved highly technical analyses. With the assistance of an international expert, a set of specifications was identified that took account of the following:

- The paper had to have sufficient tensile strength for roll-fed web offset printing. This high-speed volume printing process was appropriate because of the enormous quantities of books to be printed over a short time.
- The paper's basis weight and bulk, folding endurance, and tear resistance had to be such that book pages would have body enough for convenient turning by children's clumsy hands. Further, the paper had to be able to withstand normal use by six children because it would be shared by two pupils per year for at least three years.
- The paper had to be opaque enough so that children just learning to read would not be distracted by images showing through from the other side of

the piece of paper. At the same time, the paper had to be bright enough to provide the sharpest possible contrast to the inked image on the page. This was important because the new books were likely to be read in unlit classrooms in a rainy, rural country.

Other considerations included such technical details as the paper's acid content (set at a level that would minimize its yellowing during the long exposure of the books to sunlight in provincial warehouses), porosity, and so on. In the final analysis, the optimal combination of three principal specifications seemed to be a basis weight of 66 gsm (grams per square meter), opacity of 90 percent, and brightness ranging from 72 to 76 percent. That described a paper grade of the groundwood variety with some long-fiber chemical pulp. The project called the paper EDPITAF TEXT.

The books were to be soft-covered because cloth or hard bindings would unnecessarily outlast the prescribed useful and legal life of the book, would cost at least ten times more, and would take too long to produce on the aging case binderies operating in the country. Cover-stock specifications were analyzed with emphasis on folding endurance and surface treatment. The former was a measure of sturdiness, especially needed for the spine, where paperbacks were weakest; the latter would resist moisture, thus protecting the book and enhancing color printing. The desired cover specifications were for a solid board of 240 gsm, bleached white and coated on one side. The specifications for paper and cover stock were submitted to the bureau of standards of the Trade and Industry Ministry, which subsequently included them among the standards of the Philippine printing and publishing industry.

With those standards in hand, a TBS manufacturing team went to the paper mills of the world, prequalifying sixteen of them that produced the grade on a regular basis. The idea was to ensure that the stock was a standard production run in several mills in various regions. In that way, the project would be confident of supply and not entrapped into accepting artificially increased prices when, occasionally, there were production shortages of that paper grade or shipping problems in one or another part of the globe.

Printing Standards

To survey the printing capacity of the industry, prequalification documents were developed and circulated in the country and overseas, the latter through consular offices in Manila. The prequalification forms inquired into the history of printing establishments, their most recent volume contracts, equipment, credit standing, and financial condition. A manufacturing team inspected printing establishments in the Philippines, prequalifying sixty-four of them. Philippine consular officials were asked to inspect overseas applicants, of whom thirty-five were prequalified.

The prospective printers were categorized according to their ability to print in bulk over a fixed period. The highest category included printers with high-speed, roll-fed web offset presses and mechanized binderies capable of producing 1 million books in four months (the period alotted in the project's network diagram). In the lowest category were printers with sheet-fed presses and slower binderies capable of producing only 50,000 books over the same period. Under the project's bidding rules, any prequalified printer, regardless of category, could join the bidding, as long as the offer did not exceed that printer's rated capacity. As a safety margin, ratings for printing under the project were set at 50 percent of actual plant capacity.

The survey showed that the better-equipped printers in the country operated commercial-size web offset presses which turned out printed sheets of 23 by 36 inches. With that, books could be made in a large format of 8 by 11 inches or a small format of 5 by 8 inches. Because the same presses could also turn out a medium-size sheet of 21 by 30 inches, a medium-size format of 7 by 10 inches was also adopted. Beginning in 1982, the TBS adopted the medium-size format as the standard for all project textbooks and teachers' guides and the large format for teachers' editions. This standardization was needed because of the increasing price of paper in the world market and the desire to increase efficiency in the handling of paper and books at the central warehouse.

A review of the books produced thus far revealed that most book designs did not require the large format and could be accommodated within the medium-size one without sacrificing size of illustrations or type. Further, the medium-size book required paper rolls only 29 inches wide, which were far more economical than the 34-inch rolls needed for the large book. A uniform book size could also make for uniform roll sizes and book cartons, facilitating stacking and movements at the warehouse.

Monitors sent to the field to investigate the physical conditions of textbooks came back with samples of the large-format books which were unusually dog-eared and often had broken spines. They saw that schoolchildren forced the large book into their tiny school bags. They also observed that the big book was handled badly in crowded classrooms. Small children folded it over as though handling a magazine, and even then reading across a page eight inches wide made them lose their place at the turnover line.

Binding and Packaging

Before binding, overprint varnishing of the cover was required as a protection against rubbing and scratching. Three very common paperback binding techniques were accepted: for slim volumes, saddle stitching (the wire staples "riding" along the fold, as in news magazines); for volumes thick enough to have a spine, either side wire stitching or perfect binding (gluing the cover onto the spine that has been serrated for better adhesion). The staple wire had to be rust-resistant, the binding glue insect-repellent.

The specifications provided for the wrapping and sealing of sets of ten books in plastic bags (clear polyethylene 3 mills thick) to protect the books in transit over water in monsoon weather and for packaging in unused, corrugated boxes (fluted, bursting strength: 250 pounds per square inch). No more than sixty copies were allowed per box. It was intended that the box reach at least the town's central school intact (that is, unopened at intermediate points of delivery—regional, divisional, and district offices—which rarely were staffed or equipped to repack for individual schools). TBS field monitors observed that at the level of the school, teachers (predominantly female) and upper graders (frequently undernourished) had to carry the boxes. The box had therefore to be neither too large nor too heavy (maximum weight: 30 kilograms). Further, teachers needed the box to store materials, especially in the almost bare classrooms of the barrio.

Work Flow

Philippine procurement laws set the limits to contracts which might be awarded on the basis of limited canvass bidding and to those which required prior public bidding a nong prequalified contractors. Small editions—usually teacher material of a few thousand copies—were contracted for through the simpler canvassing mode. Three to five prospective printers were asked to quote prices on a given set of specifications, and the most advantageous offer was accepted. A purchase order was issued to the contractor, who billed for the entire amount upon complete delivery of the printed books.

Large editions required a long and complicated process of public bidding, involving many steps and legalisms. For an edition of 250,000 copies, the contracting cycle (from preparation of bidding documents to delivery of the last copy to the TBS central warehouse) would ordinarily take ten months to complete. On the basis of the blue schedule and the annual all-TBS work plan prepared at the end of the previous calendar year, the manufacturing division scheduled the current year's procurement. Books of similar specifications were grouped as items in a single package. Bidders were asked to prepare offers on individual items.

Preparation of Bidding Documents. The preparation of bidding documents, which was scheduled to take thirty days, included compiling a fifty-page booklet containing the rules of bidding and specific instructions to bidders; the required standards for printing, binding, and packaging as well as the attendant materials for these; the bidding forms, detailing for each book the total and unit costs of paper, printing, delivery to the TBS central warehouse, and insurance; annexes on monitoring forms each contractor should keep and update for TBS inspection; lists of project-accredited bonding firms; and the legal bases and penalties for infraction of bidding and contract terms. The documents were submitted to the Textbook Board for approval. In accordance with loan conditions, copies were sent to the World Bank for review. Upon board approval, an invitation to bid was published in newspapers of local and international circulation and sent to embassies and consular offices of foreign governments in Manila. Prequalified printers secured copies of the document at a nominal fee.

Tender Period. The forty-five-day tender period or waiting time prescribed by World Bank procurement guidelines for international competitive bidding allowed sufficient opportunity for local and foreign firms to prepare their estimates. A week or two before the bidding date, a prebidding conference was called at the TBS offices to clarify ambiguities in the bidding documents and to issue bid bulletins for any changes in specifications or bidding dates. On the day of the bidding, a committee composed of MECS officials and consultants called for the bids, read every item aloud, and checked that each offer complied with the requirements of the bidding documents, especially the bid proposal bond. This bid bond was usually about 10 percent of the offer—consisting of the cost of paper, printing, delivery, and insurance.

Although the TBS was not represented on the bidding committee, it was able to provide technical and clerical support: communication with prospective bidders, arrangements at the TBS where biddings were held, preliminary evaluation of offers, and custodianship of bidding records. Later, the TBS executive director became a member of the bidding committee, but MECS created its own technical support capability. It was believed that the confidentiality of the bids was better assured with MECS performing all technical tasks after the bidding

rather than the TBS, which dealt daily with successful bidders.

Bid Evaluation. The preliminary tabulation and assessment of offers was submitted to the bidding committee for its own, official evaluation, which was scheduled to take fifteen days. The most advantageous offer was recommended to the Textbook Board. Upon the latter's acceptance, the recommendation to award was made to the education minister with the notice of award attached for his signature. Simultaneously, the World Bank was informed by telex (a full documentary report was sent by mail). After the minister's approval and Bank clearance, the notice of award was sent to the winning bidder. The notice also invited the prospective contractor to come to the TBS for negotiations and to secure the necessary performance bond and insurance for the government-owned paper that would be used. The performance bond was for twice the amount of the bid proposal bond. The insurance for paper was for 110 percent of the value of the paper.

Contracts. The terms of the contract, rarely price, formed the substance of negotiations—for which thirty days were allowed—between the TBS and the prospective contractor. Schedules for the issue of paper to the printer, manufacturing, delivery, and progress billing were set. Proportionate partial payments would be made to the printer as finished books were delivered, inspected, and accepted at the central warehouse. The first billing, however, was not to be less than 45 percent of corresponding deliveries. About 10–12 percent was withheld from every payment, the retention payable upon completion of the contract. No escalation of price or advance payments were allowed under government auditing laws. Subcontracting to other printers was allowed only with prior approval. The negotiations completed, the TBS prepared the contract and secured legal opinion from its lawyer. The contract was signed by the printer and the Textbook Board.

The contract was then submitted to the education minister for approval, for which sixty days was allowed. Contracts worth more than 2 million pesos ($100,000) required the approval of the president of the Philippines. Simultaneously, the contract was sent to the World Bank. When all approvals had been secured, the TBS released a copy of the contract to the printer, requiring submission of the performance bond and insurance for the paper. When these were done, the TBS issued the notice to proceed, releasing the repros of the book and paper for its printing.

Completion. Quality control inspectors periodically visited the contractor's printing plant to monitor the progress of the film assembly, blueprinting, platemaking, printing, binding, and packaging—all of which were scheduled to be completed in 120 days. The inspectors brought back to the TBS proofs for approval by the textbook editor (blueprints of the text and color proofs of the cover), approved press out-turns (the first production-quality sheet turned out by the printing press after it was made ready and before full-speed printing began), bindery dummies, and the mock-up of the fully loaded textbook carton. They also advised the central warehouse of incoming deliveries of finished books. Distribution staff at the warehouse inspected samples of all deliveries and accepted or rejected them accordingly.

Printers' delays in withdrawing paper from the TBS warehouse were penalized ($0.50 per metric ton on undrawn paper per day in warehousing charges plus 0.1 percent of the cost of undrawn paper per day in liquidated damages). The penalty for exceeding the contract completion time for delivering finished books was 0.1 percent of the cost of undelivered quantities per day. Another printer could be asked to complete the undelivered balance and the cost charged to the contractor. Extension of contract time was allowed for legitimate reasons.

After deliveries were completed and all the inspections made, the printer presented its final bill and clearances (certifications of salaries paid to employees, taxes paid to the government, and the absence of any legal liabilities). The TBS made the final payment and required the printer to post a guarantee bond (20 percent of the contract price) before releasing the retention payments and the performance bond. The guarantee bond ensured that the printer replaced whatever defective copies might be discovered during a one-year period after printing.

Paper Problems

Procurement. The first several bidding packages for the printing of textbooks were of the integrated type—that is, the participating printers offered prices for both paper and printing. On the basis of specifications set by the TBS, printers bought their own paper from the international market. The printers, however, complained that they did not have enough money to finance the purchase of paper because of the high duties that would be levied on the importation. Therefore the project helped the printers by ordering paper for them, invoking the tax-exemption privilege of the education task force on purchases of materials and equipment for use in education projects. By buying paper tax free, the savings could be passed on to printers of project textbooks and ultimately to the project itself. Under that arrangement, the project paid for the paper (using the direct-payment facility of the World Bank loan) and secured the needed certificates of tax exemption from the Finance Ministry for the printers. In turn, the printers took care of all

customs formalities, brokerage, and delivery to their own plants. The cost of the paper was deducted from their bills.

There were three serious problems with the arrangement for procuring paper. First, government auditors interpreted the paper to be government property because the project paid for it and the paper entered the country tax-free. As such, the auditors construed the purchase as a form of advance payment to the printer, which was not allowed under auditing laws. Further, they warned that the purchase put the government at risk because the paper (at the time estimated to be 45 percent of the value of any printing contract) was worth more than the printers' performance bond, which was set at only 20 percent of the value of integrated contracts (which covered both printing and paper).

Second, the arrangement implied that orders for paper could not be placed until the winners of a bidding were known. But then the intervening eight weeks for contract approval were not enough time for testing the samples submitted by the printers' paper merchants and for opening international letters of credit in favor of the papermakers. The foreign mills needed time to manufacture the paper and more time to ship the paper, frequently from halfway around the world.

Shipping was delayed by longshoremen's strikes in Europe and by a government policy requiring all official cargo to be handled only by Philippine-flag carriers. These were frequently unavailable when needed at ports of origin or were noncontainer vessels. At least one shipment was carried break-bulk (that is, uncontainerized), and the paper rolls, which arrived badly damaged, were unloaded on an open pier in Manila during a tropical storm. The results were loss of paper, printing delays, and a mound of legal controversy over insurance claims.

Third, the arrangement left the TBS with virtually no control over the paper it had paid for. Printers had great difficulty determining which of the sealed containers had their paper. The confusion led on occasion to short shipments to some printers and overshipments to others. Because the government was named in the shipping documents as consignee, there was controversy as to who should pay customs' warehousing charges or penalties levied by freight companies for delays in stripping the containers of paper cargo.

In 1979, the TBS scrapped the arrangement:

> The procurement procedure was modified . . . when the project separated paper purchase by international competitive bidding from the purchase of printing services . . . Under the new procedure, the project purchased paper from prequalified mills through local merchants and assumed full responsibility over ordering, insurance, freight, brokerage and handling, warehousing, and releases to printing companies . . . This involved buying paper in enough quantities for one full year's production and replenishing the stock periodically. The procedure was considered advantageous because it would make paper available as soon as a printing award was made (saving on time lost waiting for paper to arrive) and would protect the project from unpredictable price changes in the international market. (PCR)

Management. Paper imported into the country in large quantities forced the TBS into costly warehousing and insurance, wasteful handling, and increased risk of loss by fire, flood, pilferage, and termite infestation:

> The TBS was totally unprepared in staff, equipment, experience, and expertise for the complex management of thousands of tons of paper shipped in from foreign ports . . . Further, delays in editorial and art activities and also in processing printing contracts . . . resulted in the project's having to house up to 10,000 metric tons of paper in two rented warehouses, one of which had a floor area of 5,000 square meters. Printers often complained of delays in paper releases, damaged and unusable paper, . . . shortages, or issuance of wrong stocks. The question of accountability frequently arose, as printers used more stock than estimated, claiming spoilage . . . The usable stock returned was sorted out for conversion (from rolls to sheets), but even this required close supervision by TBS staff, who had little or no training in paper handling and whose assignments were warehouse-keepers and printing inspectors. (PCR)

(Under the new arrangement, printers had to make their bid estimates on the basis of paper supplied by the TBS. This change in procurement policy—from the integrated paper-and-printing contract to bulk purchasing of paper and local bidding for printing services—had a profound effect on the kind of printing service available to the project. See the paragraphs below on printers.)

Significant quantities of paper were in fact damaged by termites and flooding at the rented warehouses. But the most serious loss was through theft; it was discovered in early 1982 and involved several employees (among others). It was not until late 1982 when the TBS central warehouse became operational that reliable control over the physical inventory was assured.

The supply of paper continues to be a problem. Local papermakers say that if they were exonerated from the prohibitive tax on imported pulp, they could supply the quality and quantity needed at internationally competitive prices. The proposition offers some hope but requires sustained persuasion at political levels much higher than the TBS.

Security. TBS managers were never comfortable with the thought that a careful enough printer could consume less paper than it bid for and use the leftovers for other, nonproject printing jobs. This possibility of technical smuggling—in this case, the use or sale of untaxed government paper for private, commercial gain—prompted the search for better security features in the paper itself. Several alternatives were considered. Watermarking was not feasible because this familiar security technique was apparently applicable only to higher-grade papers of limited roll widths and production quantities. Rubbermarking, a variant which involved impressing an image on the paper with a rubber-stamp-like image carrier, seemed technically possible but impractical. Still another variant, paper lining (embedding lines by water jets onto paper) offered near-invisible marks on the paper, making the security feature very hard to detect by both illegal user and lawful owner as well.

Chemically reactive papers (in effect, like litmus) were also rejected because detection depended not on plain sight but on the use of liquid reagents. Various surface treatments (such as texturizing with color fibers, as is done for paper money) were similarly rejected because papers so treated interfered with printability and legibility. Of all the alternatives, color tinting offered the best, visually verifiable security feature for EDPITAF TEXT. Paper tinted a unique shade of light yellow contrasted sharply with images printed in black and was easily distinguishable from commercial printing papers available in the market. The new choice was called light buff.[7]

For the next procurement, the TBS called for the light buff stock. To broaden participation among prospective sellers, however, two other papers were listed as acceptable: white with rubbermarking and light buff with rubbermarking. The new bids also called for a bulk order to be shipped to Manila in small quantities on demand. This assured that the TBS would not have to store so much paper, thereby minimizing warehouse congestion and its accompanying risks.

Paper merchants found these two requirements hard to meet. Two biddings were voided because not enough offers were received or not one of several offers complied with either the kind of paper called for or the staggered delivery scheme. In the end, the TBS had to enter into negotiations with the lone complying bidder, a lengthy process that involved securing both the education minister's and the World Bank's prior approval.

The long wait resulted in the depletion of paper stock for printing. For the textbooks needed for the school year starting June 1985, the TBS had to use all the residual stocks, sacrificing quality and economy as odd paper lots (different grades and roll widths) were combined and released to printers. Paper rolls previously set aside as unusable because of water damage, termite infestation, or crushed cores were sent out for sheeting and used to print textbooks to satisfy the field requirements until the new stocks arrived.

Printing Problems

Foreign Printers. With paper stock available in Manila, printing was provided almost totally by local firms. This was foreseen in the preproject appraisal, which noted the existence of a viable local industry with enough capacity for book work. Further, the project was expected to promote the development of the industry in that the experience and profits derived from printing for the project would enable Filipino printers to upgrade their plants and procedures to international levels so that they could compete for foreign contracts.

Local printers enjoyed many advantages. The textbooks were formatted to be suitable for machines in most common use in the country. The prescribed mode of procurement was local bidding, with a mere concession that foreign firms would be allowed to participate. Paper already in Manila freed local printers from the financial burden of buying the stocks and then having them shipped in; they had only to transport the paper from TBS warehouses to their own plants. And the flag law, recognized by the World Bank, granted local manufacturers a 15 percent preferential margin over foreign competitors. A Filipino offer of $1.15, for example, would be evaluated as equal to a foreign offer of $1.00. Finally, delivery costs of local printers were obviously lower than those of foreign printers. Not surprisingly, more than 90 percent of the volume of printing was won by the local industry.

Nevertheless, foreign printers, mostly from nearby countries, continued to participate in the project, occasionally winning a contract. A significant factor for any small success they enjoyed was the TBS's approval of the foreign printers' supplying their own paper, equivalent in quality and cost to the specified EDPITAF TEXT. To the foreign printer, the concession meant a reduction in freight cost. To the TBS, it resulted in paper overstocking because the quantity of paper previously bought and allotted for a particular book would not be withdrawn by the winning foreign bidder.

On the one hand, allowing foreign printers to acquire their own paper kept them in the running, if only minimally. They provided a challenge to the local industry, whose members vowed to "keep printing here in the Philippines" and proceeded to outprice the out-of-towners, depressing overall cost to the TBS. The foreigners also provided the extra capacity that kept production up-to-date when all local printers were occupied and could not be awarded any more contracts. Better equipped and more sophisticated in international business, the

foreign printers were model contractors who complied with all requirements (bonds, samples, schedules) to the letter. To TBS managers, working with the foreigners was a relief from the imponderable problems posed by the local industry. On the other hand, the near-shutout of foreign printers cost the project dearly. Although the predominantly local contracting made for good politics in the Philippines, on one occasion it resulted in a violation of World Bank procurement guidelines. Unwillingness on the part of higher authorities to approve an award to a foreign bidder was protested to the World Bank, which subsequently made a misprocurement ruling.[8]

Limited Participation. The intense competition provoked by public bidding among local printers, who were also bent on outbidding foreigners, forced severe cuts in estimated costs, leaving very narrow margins for profit (and error). Furthermore, government contracting was very one-sided: downpayments were not allowed, many bonds were required (proposal, performance, insurance for paper, guarantee), and payments, with 10 percent retentions, required much documentation and lengthy processing.[9] Payments were frequently delayed as a result of tedious inspections by independent government auditors and lack of funds from the Budget Ministry. These financial constraints made participation in the project a risky proposition for many "subsistence" printers whose liquidity was low and who could not sustain operations for long without substantial cash inflows.

The quantities involved also effectively limited the number of possible participants. With typical print runs of almost 200,000 copies, many printers were called but only those few who operated web offset presses were eventually chosen. Questions of actual available capacity were raised as the same half-dozen printers vied almost fortnightly for contracts, and evaluation could not keep pace with bidding. Pending awards stacked up as the TBS deferred signing new contracts with winning printers already behind in delivery schedules on current contracts. The hoped-for trickle-down effect—of big printers with large orders leaving their other, small jobs for little printers—did not materialize. And with multiple jobs ongoing under one printer's roof, quality control and monitoring of paper consumption became very difficult.

Delays. Inefficiencies in contract processing, repro preparation, and contract execution were chiefly responsible for the inability of the TBS to keep to book manufacturing schedules. As with paper procurement, contracting for printing services was inordinately delayed. The procurement system (operated by the education task force, which had its own independent committee on bids and awards) worked well for the textbook project throughout its first phase. But a year into the second phase in 1983, the new MECS leaders changed the composition and procedures of the committee. Unfamiliar with the time constraints of externally assisted projects, the new committee and approving authorities at the MECS could not process contracts according to preset project schedules. Two years later, the committee was changed again, further burdening a procurement system already laden with backlogs and indecision.

Delays in completing the camera copy were partly due to the inexperience of project staff newly trained as authors, editors, and book designers in an integrated educational publishing operation. Confidence about repro completion dates was crucial to manufacturing because a host of downstream entanglements resulted from missed repro dates. When bidding was postponed, bidders' bonds lapsed, and renewal meant added cost to printers. When repros were not given on time, printers demanded extensions of contract completion time (with corresponding extensions in performance-bond coverage at additional premiums) or outright renegotiation of the contract price. These difficulties resulted in further delays because of the prior approvals for negotiations required. Even approvals of blueprint proofs and press out-turn sheets were delayed as printers were persuaded to accommodate latecoming and costly corrections.

Efficient contract implementation was hampered by the industry's failure to adhere to quality standards:

> Plant quality control, which in developed countries is a built-in feature of printing establishments, was virtually exercised by TBS. It assigned inspectors to plants where project contracts were ongoing for supervising the contracted work on the production floor. During times that the inspector was at another plant, some printers waited until the inspectors returned to approve a print run or, worse, went ahead with unacceptable work. The latter accounted for spoilages of paper and prompted printers to demand more paper than was originally provided for in their contracts. Although the project had sought to solve this problem as early as 1978 by sponsoring a training seminar on printing quality, . . . the effects of the training were short-lived, as printers earlier prequalified left the project and new printers joined, and the project had since been unable to organize follow-up training. (PCR)

The rigidity of the procurement scheme was most evident during the monsoon season of 1984, when several typhoons hit the country, destroying schools and textbooks. After assessing the quantities needed to replace the lost books, the TBS availed itself of emergency purchases (by canvass bidding) to reprint textbooks and

to buy the project's commercial editions from reprinters. The well-intentioned measures bogged down for lack of timely funds from the central government's budget office. Distribution finally proceeded along with the regular production and reached the affected areas many months later.

To the end of the project's second phase, the right manufacturing solutions eluded TBS managers. Did public bidding depress prices so much that printers were forced into error and contract violation? Did local printers deliberately "take a dive" with manufacturing prices to get for their own use a little more of that precious and tax-free commodity, paper?

Distribution of Textbooks

The TBS distribution division was headed by a chief with a staff of thirty-eight organized in the three sections: statistics, warehouse and traffic, and field coordination. The division was responsible for ensuring the timely delivery of textbooks to the entire public school system and maintaining an acceptable level of textbook supply year-round.

Work Flow

To accomplish those objectives, the division created a reliable data bank of school enrollments and locations, established the physical and administrative network for book deliveries, managed a regular procurement cycle for freight forwarding, and maintained continual field contact about the books' supply and physical condition.

Distribution Planning. During the first two rounds of textbook distribution in 1977–78, the TBS used the enrollment data of the ministry's planning office. The data proved very unreliable. The distribution division then undertook the task of building its own data bank on the basis of school records gathered from the field and of the experience of the first round of deliveries. The figures were continually updated over the years, and by 1981 the TBS was able to project enrollments for ten years hence.

The division's statistical projections were used for determining the number of textbooks and teachers' guides to be printed. The projected enrollment for a grade level during the year in which a new text would be introduced was taken as the basis of computation. Half of that enrollment represented the distribution target of one book for every two students. To that figure was added the number of teachers and school administrators needing copies of the book. The total constituted the basic field requirement for that title. An estimate was also made of the number of extra copies needed to replace those lost or worn out during the first three years of the useful life of the book. This additional quantity, called the reserve stock, was added to the basic field requirement. The grand total was rounded to the nearest thousand and adopted as the official manufacturing target. From 1976 to 1981, the formula of half the enrollment plus 34 percent reserve stock was used. Field studies conducted in preparation for the second phase showed the number to be excessive. Beginning in 1982, a more conservative reserve stock of 15 percent was adopted.

On the basis of the blue schedule and the bidding schedule of the manufacturing division, annual plans were detailed for every textbook title to be made available during the year. All quantities were summarized by intermediate destination (regional or divisional warehouse) and rounded to the nearest box; further summaries were made by ultimate destination (individual schools) and expressed in number of copies. Two master lists were prepared. One was for the basic field requirement, which had dispatch priority. The other was for the reserve stock to be kept at the local warehouses, which was delivered later.

Warehousing and Traffic. Distribution was designed as a two-stage activity. The first stage consisted of receiving printers' deliveries in a central TBS warehouse in Manila and freight forwarding them via commercial carriers to MECS warehouses and storerooms in the various provinces. The second stage involved the transshipment of the books from the local warehouses to the schools. The freight forwarding was managed and paid directly by the TBS; the transshipment was managed by local education authorities using funds provided by the TBS. The plan was to withdraw the financial support gradually over the years as regional offices of education increased the amount of their budget for local distribution in their annual requests to the national government.

The physical infrastructure for textbook distribution was established early. A central TBS warehouse was maintained in Manila, and 152 receiving warehouses were made operational throughout the country, usually adjacent to the 13 regional offices of education and in most of the offices of the 127 school divisions in chartered cities and provincial capitals. About 60 of these were provided with radio transceivers beamed to the main station at the TBS. Plans for 1982–85 included the construction of 26 more warehouses.

For freight forwarding, twelve land, sea, and air carriers were prequalified during the project's first phase; in 1985, under a revised procedure, twenty firms were prequalified. As with book manufacturers, the freight companies were evaluated for their experience, equipment, and financial capability. The annual distribution

targets were announced to the prequalified firms, which were invited to submit proposals. The offers, usually expressed in unit rates (price per kilogram) for each point of delivery, were read in public bidding. The firms evaluated as offering the most advantageous prices were awarded contracts for one full year's delivery service.

The contracts stipulated the volume and approximate weight of books to be delivered to specific local warehouses. The contractors were called to the TBS warehouse to pull out stocks and the accompanying distribution lists and other delivery documents. They were paid in Manila upon presentation of proofs of delivery—usually the official delivery receipts signed by the division superintendent or supply officer. The TBS kept (and periodically updated) a file of specimen signatures of these authorized recipients.

The TBS prepared annual memorandums of agreement with the thirteen regional offices of education for local distribution. These memorandums included the year's distribution plan for the region, the resources needed to carry out the plan (staff, materials, operating expenses, local freight), detailed costing, and the schedule of disbursements from the TBS to the regional offices. Under the memorandums, the regional directors of education had authority over all local distribution, including the management of funds. They were required, however, to prepare an annual liquidation report, noted by the local auditing office.

Field Coordination. A team of monitors was sent to the field, visiting up to 400 schools yearly to check on the accuracy and timeliness of deliveries. These all-around troubleshooters "checked [the contents of] the local warehouses, advised field officials on distribution problem-solving and reordering from Manila, gathered . . . data, and received complaints. At the schools, they checked the condition of the books and the manner of utilization and maintenance" (PCR).

The troubleshooters wrote detailed reports, which were widely circulated because they contained hard news from the field relevant to many TBS divisions. Typical items were typographical errors spotted by teachers (editorial), confusing page layouts (production), missing pages (manufacturing), late or short shipments (distribution), revised teacher statistics (training and evaluation), and lost or lapsed disbursement authority (finance).

Problems

Among many problems, four were outstanding. These had to do with distribution efficiency, timeliness of financial assistance to the field, adequacy of documentation, and stability of the delivery network.

Late Arrival of Books. The objective of having the textbooks in school ready for use when classes opened in June was not achieved for all titles because of upstream delays. Initial, faulty statistics also resulted in short shipments. To minimize further delay, the distribution division followed a policy of continuous delivery, shipping out inventories as soon as they were received from printers in enough quantities for at least one truckload for a specific local warehouse. The overall performance improved over the years as manufacturing schedules stabilized and as the division compiled more reliable data.

Delayed Funds. Despite well-made plans, the TBS as a project was wholly dependent on the release of funds from the budget office of the central government. Because these were frequently delayed, the TBS could not subsequently transfer funds to the regional offices of education to finance local distribution. The tight fiscal control exercised by the central government's budget office also hampered the flow of funds to the field. The authorization to spend (called cash disbursement ceilings) had a term of one quarter of a year. But it took so long to process the funds from the TBS to regional office to division office that by the time the end user division received its share, the quarter had ended and the authorization had lapsed. Revalidating expired disbursement authorizations involved lengthy reapplications to the national budget office in Manila. To keep distribution going, the TBS monitors resorted to persuading local educational authorities (and auditors) to pay for their local deliveries from their own budgets while the release of project funds was being negotiated in Manila.

The situation improved in 1982 when, at the TBS's urging, the audit commission allowed the issuance of national treasury warrants to the regional offices. This change of disbursement mode assured the timely availability of funds for distribution at the local level. At the end of each year, however, the regional offices were unable to organize their disbursement documentation and pass it through audit. Government auditors in Manila threatened to withhold the coming year's warrants unless the field liquidated past accounts. The TBS would negotiate with auditors for the release of the warrants, citing the need to move the books out of the congested local warehouses. The auditors would eventually relent, and the money would arrive at the regional offices late again.

Lost Inventories. The TBS was surprised to read in the annual management evaluation reports of the government's independent audit commission that millions of textbooks were unaccounted for. On the contrary, internal records showed that all deliveries had actually

been received by authorized parties. The erroneous conclusion was reached on the basis of a strict interpretation of the government's accounting treatment of the textbooks as semi-expendable property. By using the standard government form required as accompanying document to any property, the TBS unwittingly became the "issuing" party and the regional office the "requisitioning" party. The terminology bore tremendous legal significance because it implied that the TBS was accountable for the textbooks, a responsibility that required a formal transfer of accountability when the books were delivered to regional offices. Because not all shipments passed through their offices (most went directly to local warehouses, usually near the division offices), the regional directors of education were reluctant to assume accountability for the books, sight unseen, solely on the basis of records presented by the division superintendents who actually received the deliveries. Some directors ordered thorough inspections of the books they were accountable for (which by that time had been distributed to all schools). The delay in legalizing the transfer of property resulted in a wide gap of records between confirmed receipts at the TBS and "acknowledged" documents at the regional offices.

The issue took time to resolve. It was pointed out that the TBS never treated the textbooks as inventories (that is, assets) in its books of account; it entered paper as supplies (an expense item). Technically, therefore, no accountability for government assets was being transferred as a result of the textbooks being distributed. Much in the same way that the post office did not "own" the letters and packages it delivered to addressees, the TBS was merely performing a delivery service to the field. Accountability began at the moment that the authorized recipient in the field signed for a shipment.

The issue was by no means only a confusion in terminology, for in the accounting treatment lay serious implications for the use of the textbooks. In government accounting, even semi-expendable property had a value that was never depreciated—and *somebody* had to be responsible for it. When legal documentation filtered down the layers of the organization, it was in the end the teacher who assumed this responsibility. All losses were therefore charged to him or her.

Recognizing that for fear of loss teachers might keep the books under lock and key rather than distribute copies to their students, the TBS tried to have the item "textbooks" reclassified as expendable property (like paper clips). Alternatively, the TBS made informal representations with government auditors for leniency with regard to reasonable losses in schools, invoking the auditing regulation that property could also be "condemned" (strictly, however, only if the property were found to be of absolutely no further use to the government) and the fact that the textbook project provided reserve stocks for just such a contingency. Neither attempt was successful.

The only other measure taken to minimize teachers' liability was the introduction of commercial editions of project textbooks. At government-controlled prices, the same books could be bought by teachers, or even parents, to replace copies lost by their children. These editions were bought also by local school boards, which by law had independent funds (usually a percentage of local real estate tax revenues), or by individual city schools, which operated self-supporting lunch counters. (Vigilant school principals' associations and parent-teachers' associations have so far successfully fought off attempts to have the income reported, and audited, as public funds.)

Institutionalization. A final problem was that the distribution scheme was not fully institutionalized. As the World Bank evaluation team observed:

> The project provided the field with new warehouses, equipped all local points of delivery, and paid for their operating cost on the understanding [with] regional authorities in 1976–77 that such assistance especially as regards staff salaries . . . would be provided on a declining basis; the regional offices would increasingly include these costs in their regular operations and request funds from the national government . . . As of late 1981, however, the ministry's central office [had] not approved them, and to date some 413 field personnel, mostly warehouse clerks, laborers, radio operators, and security guards, continue to function . . . on a temporary basis. TBS has made representations with the minister, but action is still pending. (PCR)

Teacher Training

Two TBS sections—one for orienting teachers on the use of textbooks, the other for studying the learning effects of the new books on students—had a staff of seventeen (ten professionals). The sections had separate chiefs and functioned independently, after the educator who was head of the division left the TBS.

The major task of the orienting section was teacher training. It was also, however, called upon to help the distribution division, which organized workshop-seminars for supply officers, property custodians, and radio operators at provincial textbook warehouses. As training on textbook use and distribution management was completed and the need for it diminished over the years,

the section was engaged more and more in orienting newly hired staff at the TBS and implementing a variety of in-service staff seminars—planning and target setting, office correspondence, typing, and such.

Objectives

The principal purpose of the project's teacher training was to promote the effective use of the new materials. Specifically, the teachers were trained to:

- Apply their skills in curriculum analysis to the use of textbooks in the classroom
- Identify and demonstrate teaching strategies appropriate to specific lessons
- Manage instructional resources so as to create effective teaching and learning situations and increase the useful life of educational materials
- Prepare the appropriate tests for use in class
- Integrate curricular areas for the development of specific skills.

Design and Implementation

Five- to ten-day training programs for classroom teachers were designed by TBS specialists with the help of curriculum center authors and educators of the ministry's elementary and secondary bureaus and the staff development unit. To prevent disruption of classes, the programs were scheduled for the vacation months of April and May. The new titles to be introduced in the coming school year were covered during the training.

In order to reach all teachers, "echo" training was employed. A core group in Manila trained up to 60 trainers for the 13 regions. The latter group traveled to the regional capitals and trained about 1,200 other trainers who in turn organized programs for as many as 100,000 teachers from various school divisions and districts. Similar but separate orientation seminars were also conducted for administrators (regional directors, division superintendents, district supervisors, school principals). These were designed in response to requests that even nonteaching personnel be familiarized with the new books so that the distribution and supervision of teachers might be better managed.

As with manuscript development and textbook distribution, training was to be institutionalized—that is, installed as a permanent feature of the educational system. Toward this end, fifteen regional staff development centers were established and provided with equipment and vehicles. But these centers managed the training programs only once—in 1978. In line with the ministry policy of strengthening overall educational management at the regional level, the responsibility for implementing the succeeding training programs was transferred to the regional offices of education. The centers, mostly in private colleges and universities, continued to be used but only as training sites.

The TBS prepared annual memorandums of agreement with the regional offices of education. For organizing the training for teachers and school administrators at the local level, each regional office was given project funds to cover all participants' travel and daily expenses as well as the organizers' expenses (materials, lecturers' fees, food, and rentals).

Problems

Resistance to Training Concept. From the very beginning, the TBS encountered difficulty convincing ministry officials in Manila of the need to train teachers on the use of materials. The ministry maintained that the high level of qualification of the teaching force did not warrant the further investment that the project proposed. It believed that because textbooks were traditionally available in the school system, there was no further need to introduce them to teachers familiar with their use.

That position of the staff development unit of the Ministry of Education, Culture, and Sports (MECS) was contrary to the perception of teachers and officials in the field. The TBS interpreted the discordant attitude as the central office's jealousy over the apparent abundance of World Bank loan funds committed to the textbook project. Furthermore, the TBS also considered that the growing popularity of the project's education task force was perceived at the central office as a threat to its own influence and authority. Indeed, with a number of projects ongoing all over the country and an implementation momentum sustained by the vigor of a young and professional staff, the task force (and, by extension, the project) gained the reputation of being "an independent republic, the little MECS with money."

The cooperation of the MECS training officials was grudgingly obtained after the TBS agreed to incorporate into the textbook training some of the topics and objectives considered important by the central office. Because some of these were only remotely related to textbooks, interest was low. In their post-course evaluation forms, the participants suggested that more time be devoted to demonstrations on textbook use, peer teaching using the new texts, and lecture updates on subject matter.

At the level of the regional offices of the MECS, there was initial resistance to training, but the transfer of authority and funds for local training to the regional MECS directors assured their cooperation. This administrative streamlining, however, signaled the death of

the regional staff development centers as project institutions. Conceived as technical training bases in the regions independent of MECS and managed by educators unhampered by bureaucratic constraints, the centers were to prepare detailed plans for training, produce training materials, and maintain a continuing evaluation of the training programs. With project funds controlled by the regional office of MECS, none of this was possible. The staff work of the regional office was generally poor, teacher statistics were faulty, and therefore financial projections were unreliable, training materials were not produced locally (they had to be produced at the curriculum centers and at the TBS in far-off Manila), liquidation and postcourse reports were submitted late, and program evaluation was rudimentary.

The training issue reemerged in 1982 when the textbook project became part of the ministry's sectorwide reform program, also financed by the World Bank and managed by the elementary education bureau. Regarding the TBS merely as provider of instructional materials for the new elementary curriculum, the bureau designed teacher-upgrading programs, omitting training on the use of textbooks. It took long negotiations to convince the bureau that textbook training was not at cross purposes with the sector program but that it was necessary for teachers to have a hands-on experience of new instructional materials developed by the project.

Late Arrival of Textbooks. Another problem was that textbooks arrived at the training sites late. It was easier to mobilize large numbers of teachers to assemble in preselected places for training than it was to get the books there on time:

> Each training program was planned for implementation in phase with the textbook production and distribution schedules, in accordance with the project intent that teachers be given training before they actually used the new textbooks. Production, however, could not keep the schedules committed to trainers at the beginning of the year. Where bidding had been postponed, and printing foreseeably could not be completed in time for training, special, limited editions were rushed to press. Deliveries of these editions were themselves frequently delayed and the materials were generally unsatisfactory because they were taken from unfinished repro pages and contained typographical and other errors. To solve the problem, TBS departed from the practice of setting teacher training targets on the basis of the production schedule for the availability of new textbook titles. Beginning in 1980, programs of training were planned after a review of what had been actually delivered to the field. (PCR)

Evaluation of Training. A third problem was that training was not effectively evaluated. Because the regional staff development centers were not allowed to function as originally envisioned, knowledge and experience of how to run training programs were not gathered and analyzed for the benefit of future programming. The end-of-course evaluations provided some clues for improvement, but the responses were so favorable that the TBS managers suspected the evaluations to be biased by courtesy. In a substudy of achievement, the TBS evaluation section compared the learning gains of students whose teachers had gone for training with those of others whose teachers had not. There were no significant differences between the groups, suggesting that teacher training was neutral with regard to student achievement.

Evaluation of the Project

Throughout the project period, studies were conducted on the learning achievements of textbook users. The studies were done on sixteen textbook titles in several grade levels of the elementary and secondary curriculums.

Methodology

The studies were essentially comparisons of learning gains between groups of students. The control group consisted of students who did not use any textbooks in class; the experimental group was given the new project textbooks. In some studies, a third group—students who used other, nonproject textbooks—was included. The groups were selected randomly and represented all regions of the country.

Because the project's principal objective was to provide textbooks to all students, the studies could not be conducted with contemporaneous control and experimental groups. Having both groups during the same year would have meant depriving students in the control group of the opportunity to use the new textbooks. Instead, a control-in-retrospect was resorted to. The control group of the appropriate grade level was selected and tested for achievement a year before the new textbook was to be introduced in that grade. During the following year, when the books were available, the students entering that grade formed the experimental group.

Tests to measure the extent of learning prescribed for each subject and grade of the official curriculum were developed at the TBS. Education specialists and curriculum writers were hired on contract to analyze the content of both the curriculum and the textbook and to write appropriate questions. The tests were val-

idated in the field, revised, designed (typeset, illustrated, laid out), and printed. A detailed test administrator's manual accompanied each set of tests.

The tests were designed to measure the amount of learning achieved by students after a lapse of time, not their mastery of the subject matter. The test items were set at a moderate level of difficulty so that the discrimination between students who learned more from those who learned less might be better enhanced. Pretests and posttests were administered to the groups. The resulting data were analyzed by computer using standard statistical programs for the social sciences. The difference between the before and after scores represented the learning gains; the difference in scores between the textbook users and the nonusers represented the learning gains attributable to the use of the main intervention, the textbook. The impact evaluation scheme also included longitudinal studies—that is, tracking the achievement of textbook users over several years of exposure to the series of new textbooks developed by the project.

Implementation

The cooperation of the regional offices was enlisted through annual memorandums of agreement with the TBS. Regional personnel were trained in test administration and correction. Their services and expenses (daily expenses, transportation) as well as materials they would need were paid for under the agreements. The TBS evaluation staff traveled to the evaluation sites to orient the test administrators and to collect the corrected test booklets. All data analyses were done in Manila. Test findings and conclusions were written in a report and circulated to the curriculum centers, the Education Ministry, and the World Bank.

Findings

The major results of various evaluation tests showed that students who used textbooks achieved more than those who did not; and those who used project textbooks achieved more than those who used other textbooks. Further, the project textbook users performed generally better than the nonusers did on test items that measured higher and more complex learning. And students who used the new textbook series consistently over several years achieved more than those who did not.

The results also showed that books might have contributed to equalizing educational opportunity. The learning gap separating higher-achieving students of higher socioeconomic status from lower-achieving, poorer students appeared to have been reduced by the use of project textbooks. The rate of achievement was faster and the gains greater among children in the rural areas than among their counterparts in the semi-urban central schools and in the cities. The results of an indirect test on the effects of language (English versus vernaculars) on achievement, however, indicated that the degree of learning was difficult to determine in a multilingual situation.

On textbook-student ratios, the findings were intriguing though inconclusive. Experiments were conducted on two groups of students in grades 1 and 2 with varying book-student ratios of 1:1 and 1:2. High achievement was noted in grade 1 when one book was shared by two students and in grade 2 when each student was given his or her own book. Apparently, the younger, beginning readers who shared a copy helped each other to read or were supervised more closely by their teachers. The older readers who had already learned how to learn proceeded faster and at their own rate because they had their own copy.[10]

Problems

Evaluation. From a management standpoint, the value of evaluation studies was minimized by the lack of appropriate institutional procedures for the effective use of their results. Aside from circulating the interim and final reports of these studies, little else was done to make the findings well understood or their implications better appreciated by the work groups who stood to benefit most from the studies: the textbook writers and editors.

The time lapse between the introduction of a new title, its impact report, and revision of the same title spanned several years, psychologically diminishing the urgency of the evaluation findings. Textbook writers and editors, harried by tight printing deadlines for subsequent titles in the same series, could not give the studies the careful consideration they deserved.

Unfortunately, the impact reports appeared opaque to writers, editors, and even to TBS managers. The reports were written by technicians for fellow technicians and therefore were not easily understood by readers outside the statistical disciplines.[11] Thus the findings and their implications were not translated into operational objectives for textbook planning, writing, design, testing, and production. Like the evaluative field-testing approach, the reports were subsequently ignored because the results came late and had limited usefulness for manuscript revision.

Shifting priorities also hampered research continuity. In 1981, evaluation was ordered scaled down and was discontinued the following year—at a time when longitudinal evaluation studies had been running a

number of years and preparatory pretesting was ongoing for forthcoming textbook titles. The sudden shift was in response to signals from higher MECS and World Bank officials that there was no further interest in replicating what was already known. For its part, the TBS was preoccupied with efficiency problems and pressed its evaluators into more management-related research. When new materials were introduced for the new elementary curriculum in 1983, the need for impact measurement was felt again, and the evaluators were ordered back to their familiar tasks.

Curriculum. Another problem that hindered textbook development in the Philippines was change in the curriculum. The project design was flawed in that it did not provide for participation by the central education ministry's curriculum units in the planning of textbook development. The project's curriculum centers proceeded independently with their own curriculum research and manuscript development. Consequently, the ministry asserted its authority by reissuing curriculum guidelines to the field just as the first project books were being distributed so that the project's new books did not completely follow the guidelines. The subsequent readjustments in already written and field-tested textbooks were difficult to make.

Nevertheless, the project was hopeful that the revised editions, coming as early as the sixth year from the time the first books were released, would conform completely to the official curriculum. But by then the ministry had plans for curriculum revision. This meant that the project needed to start over again for the lower grades, even as it was only beginning to distribute the new textbooks—on the old curriculum—in the upper grades. In ten years of implementation, the lesson learned was that a stable curriculum was necessary for stability in textbook development.

Language. In spite of a seemingly coherent bilingual policy in education, the textbook project was confronted with language problems at every turn. It was evident from the manuscripts that few among the project authors had sufficient mastery of either English or Pilipino to write well. Even at the TBS, it was a rare editor who wielded a blue pencil with confidence. During the field-testing of social studies texts which were being introduced for the first time in Pilipino, feedback was mixed. Teachers reported that non-Tagalog children found the books difficult When evaluators could not detect any serious inability of children to understand social studies in the national language, speculation suggested that it was the non-Tagalog teachers, not the children, who resisted the innovation.

With the use of the new textbooks in class, TBS monitors returning from the field continually reported that in non-Tagalog areas teachers would resort to two-step translations for reading in Pilipino. To explain an unfamiliar Pilipino word or phrase, the teacher would give the English equivalent and then finally unlock the vocabulary by leading the students to discover the equivalent in the local language. The influence of this apparent trilingualism was not measured.

Language will become a more serious issue in the light of disturbing findings that achievement may be greater when teaching and testing in first-grade science is in the vernacular rather than in English. Curriculum developers in the practical arts for the secondary level have also been caught in a dilemma: required by policy to develop materials in Pilipino, they are unable to find Pilipino equivalents for the many technical terms in industrial arts, business and distributive arts, agro-fisheries, and home economics. The textbook project, now the largest book publishing enterprise in the country, should be used by national planners as a major source of information for reviewing language policy. Ten years of experience with language-related education problems are worth considering in the continuing effort to free the Filipino from being illiterate in Pilipino and unintelligible in English.

Summary

The textbook project in the Philippines has been called an unqualified success. The assessment seems well deserved. Yet the success has not come without costs or risks. These are succinctly summarized by the executive director of the Textbook Board Secretariat, who stated that although all targets were substantially achieved, and some even exceeded, the project contended with a number of problems and constraints that at various times threatened it with derailment if not failure. Some of the difficulties were as follows:

- Expertise: for the scale and standards set for the project, the special skills of editors, authors, book designers, and illustrators proved to be in short supply. The project has had to depend on the help of transient foreign experts, young professionals with little experience, and even education specialists recalled from retirement.
- Manufacturing technology: typesetters and printers had to retool to meet the unprecedented requirements of the project on a competitive basis.
- Distribution: distribution had to contend with the lack of an efficient transportation system and the naturally difficult geography of the country, which frustrated efficient delivery of books to schools.

- The language: the textbooks were printed in English and Pilipino, which are both second languages in most parts of the country. This impaired the effectiveness of the new textbooks.
- Curriculum changes: changes and new objectives in the official curriculum and educational policies tended to threaten every new textbook with early obsolescence.
- Complexity: in the operation of a project of this magnitude, with many virtually independent activities in book development, procurement, staff training, and evaluation being undertaken simultaneously, phased implementation proved difficult to maintain.
- The private sector: traditional private textbook publishers viewed the textbook project with hostility as undue encroachment by the government into an area best left wholly to private industry.
- Institutionalization: "The objective of institutionalization has proved most [elusive]. At the end of the project period . . . the legal structure was yet to be developed that would ensure the government textbook program continuing resources, flexibility of operation, and provide staff security and career opportunities" (Aprieto 1983).

In spite of these difficulties, it must nevertheless be emphasized that in the Philippines there now exists a professional, systematic mechanism for creating instructional materials, ensuring their provision to schools, and maintaining an adequate supply of acceptable quality.

Notes

1. Data are from 1982–84 TBS annual reports; data for 1985 were not yet available as of this writing (early 1986).

2. With some modification, the sequence of presentation of topics in this case study follows Searle (1985: 12–17).

3. Private publishers continued to submit textbooks for board approval. Without national government orders, however, their business was reduced to sales to private schools, educational districts with locally generated funds, and general bookstores.

4. Pilipino, the legislated national language, is 95 percent Tagalog, the language of much of the capital region. Tagalog is the prestige language because as a primary city, colonial Manila was the seat of government, commerce, and culture and the cradle of the revolution against Spain. Many revolutionaries wrote in Tagalog for security reasons.

5. The opportunity to improve the first (1977) editions was also effectively lost when a new curriculum was introduced in 1983. Completely new materials were needed as the new curriculum reordered sequences of learning topics, expanded the scope of some subjects (for example, science and health), and replaced other subjects (social studies became civics and culture)

6. The in-house TBS print shop was mainly for filming repro materials, printing jobs not worth the bother of bidding formalities (tryout copies, evaluation tests, letterheads, and newsletters), and converting white waste paper returned by printers into sheets for office use. The print shop was also used for orienting newly hired staff and trainees from neighboring countries to the principles of graphic-arts photography and offset printing.

7. The TBS was aware that in the first textbook project of Indonesia the government implemented a security measure for a series of books used in social studies. To safeguard the correctness of the *pancasila*—official teachings on the moral conduct of citizens—paper tinted gray and surface-treated with security fibers was manufactured by government mills. The books were printed only on government presses.

8. This nonaward of one printing contract was the sole violation during the five-year life of the first-phase project. The World Bank did not finance that particular contract and canceled a corresponding $270,000 from the proceeds of the loan.

9. The traditional practice in the private sector was for the customer to pay 50 percent upon the signing of the contract. Even government contracts for public works allowed for a 15 percent mobilization payment at the outset. Unfortunately, neither facility was allowed by government auditors, who cited lack of specific legal basis.

10. A cost-effectiveness study done by Unesco in 1979 reported that textbook production (excluding teacher training and evaluation) increased the cost of education per student by less than 1 percent; student performance, however, increased by 14 percent.

11. Indeed, evaluation was much better appreciated elsewhere. The World Bank published the Philippine findings earlier than the TBS in Heyneman and others (1984).

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The Textbook Project in Lesotho

Albert Aimé and John Overton

In Lesotho education is a joint venture between the government and the churches, which administer about 97 percent of the primary and 86 percent of the secondary schools (the remainder in each case is private). In 1981 the educational system was characterized by high dropout and failure rates, poor facilities and staffing, and weak management and professional supervision. As part of an effort to strengthen the system, a textbook project was introduced with the support of the World Bank.

Background and Planning

The administrative, financial, and academic control of the formal system was vested in the Ministry of Education, Sports, and Culture (MOE). The MOE trained and appointed teachers, administered examinations, reviewed and authorized curriculums, regulated the opening and closing of schools, inspected the schools' operations, and paid teachers' salaries. The MOE provided the bulk of the funds for the National University of Lesotho, which was administered by an independent council chaired by a government representative.

The administration of the capital budget and the preparation and review of proposed education projects were the responsibility of the MOE's Planning Unit. Before its involvement in the textbook project, this unit had coordinated a school mapping exercise, computerized education statistics, and participated intensively in a National Sector Survey of Education, which was published in November 1982. The main recommendations of the survey were to:

- Improve the quality and efficiency of primary education
- Emphasize mathematics and science and expand practical studies in the general secondary program
- Develop vocational, technical, and higher education to meet the national labor needs in both the productive and rural sectors
- Extend and coordinate nonformal education programs
- Improve the joint government–World Bank mission coordination and supervision of educational activities.

To achieve these goals, particularly those related to the supply of textbooks, the government planned the following activities:

- Develop curriculums relevant to the country's circumstances, including improvement in the teaching of the national language
- Provide instructional materials for all children at the primary level
- Expand preservice and in-service teacher training programs to increase the number of qualified primary teachers
- Achieve universal primary education by the year 2000.

The Educational System

When the textbook project started, primary education (grades 1–7) was conducted in the native language, Sesotho, for the first four years, with English added during grades 5 through 7. In 1982, total gross enrollment was 278,000. Approximately 30 percent of the primary enrollment was overaged students. The age of school entry was gradually dropping, with more males attending—for example, in 1975, females outnumbered males by almost 50 percent; in 1982 they outnumbered them by only 14 percent.

In 1980, automatic promotion was replaced by con-

tinuous assessment of student achievements and regular testing to determine whether curriculum objectives were being met. Nevertheless, in 1982 only 27 percent of the students who had started school in 1975 had progressed as far as grade 7; 72 percent of these passed the primary completion examination (19 percent of 1975 enrollment), and of these. 43 percent (8.4 percent of the 1975 enrollment) entered junior secondary school (grades 8–10).

In 1982, 36 percent of the teachers were still unqualified; the national teacher-student ratio was 1:48, although many classes were considerably larger. To improve the quality of teaching, the MOE operated an in-service teacher training course.

In 1982, secondary education (grades 8 through 12) had an enrollment of 29,000 (60 percent girls), the equivalent of about 16.4 percent of the population aged thirteen to seventeen years. Of the secondary enrollments, 83 percent were in junior secondary and 23 percent were boarders. The same year, 30 percent of the teachers were unqualified and the teacher-student ratio was 1:21. The number of secondary schools had almost doubled between 1975 and 1982, a rapid expansion that negatively affected examination results.

Enrollment in vocational and technical education at the secondary level was 1,600 in 1982, with more than one-third in home economics, one-fourth in construction trades, and smaller numbers in motor mechanics, electrical engineering, and secretarial, business, and administrative training. Agricultural education for the postprimary level was offered at six farmer training centers and for the certificate and diploma levels at the Lesotho Agricultural College; there were 350 trainees.

Teacher training for primary and junior secondary education was (and still is) provided at the National Teacher Training College (NTTC). The NTTC offered three courses leading respectively to the Primary Teacher Certificate, the Advanced Primary Teacher Certificate (special administration course), and the Junior Secondary Teacher Certificate. Senior secondary teacher training was provided by the National University of Lesotho (NUL), which offered bachelor's and master's degrees in education.

Planning for the Textbook Project

In 1987 it was estimated that only about 30 percent of the primary students in Lesotho had access to the textbooks prescribed by the MOE. This was largely because books had to be bought by parents, and this became a considerable financial burden; the majority of books for primary school were printed and published by the two predominant church groups, which supplied their own schools.

A gradual increase in manufacturing costs led to a reduction in both the quality and quantity of books. Furthermore, many of the books needed revision, not only because they had been in use for many years but also because of changes to the curriculum. Books needed to be ordered by each school about six months before the start of the new school year in January. Demand was extremely difficult to estimate.

The MOE was aware of the need to increase the supply of books. In 1975 it had established the National Curriculum Development Center (NCDC) to revise curriculums and prepare national textbooks. An important component of the World Bank's Second Education Project (1977–82) consisted of building and equipping this NCDC. It was complemented by twenty person-years of technical assistance to help develop national textbooks and by a U.S. Agency for International Development (USAID) project to build, equip, and staff an Instructional Material Resource Center (IMRC; a small printing unit set up earlier with the assistance of USAID). Because government objectives had not been clearly defined and the above projects were not adequately coordinated, much time was consumed defining roles rather than developing the needed materials. In addition, most of the technical assistance was never recruited, and by 1981 very little had been done about development. It was then that the government realized that if it was to improve the quality of education, it needed to supply students and teachers with textbooks available on the market until it could produce its own.

The proposed project was to provide for the purchase and distribution of textbooks and workbooks in the three core subjects (Sesotho, English, and mathematics) to all children attending primary schools. The book project would be administered by a Book Supply Unit (BSU) set up in the MOE. The MOE would establish a nominal book usage fee so that children could use the books for a year and pay only a fraction of the full cost of buying them. This initial fee would be set at 2.00 maloti (M) per year in grade one, M3.00 per year in grades two to five, and M5.00 per year in grades six and seven. The fee would cover the use of all the textbooks needed by the child in the core subjects that year. Children able to show that they could not afford to pay the nominal fee would be allowed to use the books free of charge. The books would have an average life expectancy of three years. The project would provide for the distribution of the books as well as modest book storage facilities.

Originally, textbooks would be either those in current use or adaptations of those used in other African countries. The MOE would inform various publishers' associations of its intention to review books in order to select those most closely related to the syllabuses and needs of Lesotho. The NCDC would then review and test the books in the schools and select about three series

in each subject. The BSU would then call for tenders or prices from the suppliers. All price quotations had to include teachers' guides and ancillary materials. Book contracts would be signed, and the BSU would supervise distribution. The proposed project would finance the initial supply and distribution of about 1.9 million textbooks. A pilot distribution would begin in the Thaba Tseka district in 1982, followed by national distribution in 1983. In addition, two book replenishments—the first in the Thaba Tseka District in 1984, the second throughout the country in 1985—would be funded by the project.

The usage fees collected annually for these books would be placed in an interest-bearing account, which would become a revolving fund. After the completion of the project, the money would be used for the annual replenishment of consumables (for example, workbooks, preprimers) while the government would replace the books in the core subjects about every three years at little additional cost. The annual book usage fees would be collected through the Ministry of Finance's subaccountancy offices located in all the major centers in Lesotho. These fees would be kept to a minimum to avoid an undue burden on disadvantaged families. It was believed that making textbooks available for all children would help more of those from poor families to complete their primary education and would simultaneously improve the quality of education.

One of the project's main goals was to establish a permanent system for supplying textbooks to all primary school students. Some changes were made to the plan in the implementation stage, both in timing and distribution. Indeed, implementation remains subject to continual review and evolution.

In the long term, Lesotho hopes to have its own primary school textbooks written and to have them printed by commercial firms. The NCDC estimated that this process could take up to ten years, but it was believed that in the meantime students would benefit from existing books. It was also believed that textbook writing skills would develop more rapidly if the NCDC staff were initially to prepare units for inclusion in their syllabuses. The publishers whose books were selected would also be asked to help the NCDC staff prepare these units. This approach was started in 1986, and by 1987 national science and mathematics books had been prepared and Sesotho books were being developed.

To guarantee proper execution of the project, the World Bank asked, as a condition of disbursement, that the MOE redefine the responsibilities of the NCDC and IMRC to eliminate all duplication. The government was also to establish standards for textbooks, set textbook fees, set up a special interest-bearing revolving account, and make the BSU a permanent part of the MOE. All these actions were completed in 1984.

The textbook project was initiated after three years of planning. The MOE held conferences throughout the country to determine parents' expectations of the educational system. The declining quality of education and the lack of adequate resources, particularly of materials to help students learn, were major concerns. The MOE wanted to make primary education more accessible to the poor and to rural children, but soon realized that it did not have the resources to achieve that goal unless part of the cost was covered by the recipients. It was therefore decided to charge a user fee, but extremely poor children would be allowed to receive textbooks free.

Funds from the World Bank would be used as seed money, while the user fees accumulating in the special interest-bearing account would enable the textbook program to continue. The Ministry of Finance (MOF), well aware that it would be unable to fund an ongoing book supply, was willing to experiment with plans which would result in the accumulation of about M2 million during the project period.

To enable the MOE, MOF, and Public Service Commission to establish new positions, the salaries of these positions were covered for three years by the project. The project also financed the cost of technical assistance for two years. One aim of the project was to maximize the use of local resources and thus minimize the cost. Existing warehouses of the MOE and rented warehouses were used when the local publishing industry indicated that it could not satisfy the needed capacity.

At this juncture, a difference of opinion arose between the MOE and the NCDC staff. The NCDC had been given a mandate (to update syllabuses and produce textbooks) but not the staffing and financial resources to achieve it. The staff, being resourceful, had sought the assistance of publishers to help them and felt that the books of the publishers who had helped them should be selected. The MOE and the World Bank, however, insisted that the books which best met the needs or curriculums or could best be adapted to meet the new curriculum should be chosen. Another issue was that NCDC staff wanted to be listed as coauthors with the publishing firm and to receive a royalty from the work they had done. The matter was resolved when the government decided that civil servants could not receive royalties, and the Permanent Secretary established a National Curriculum Committee (NCC) to review the situation. The NCC had representatives from the MOE, MOF, IMRC, NCDC, National Teacher Training College, National University of Lesotho, the teachers' association, and the religious groups responsible for the majority of the schools. The NCC influence resulted in a more objective selection of books.

Because of difficult terrain and access, it was decided to begin with a pilot distribution in one district. The success of the pilot scheme was due in large part to the services of an experienced textbook specialist, who in

November 1981 assisted in selecting books, ordering them, distributing and storing them, laying the foundation for the Book Supply Unit, and preparing a timetable. At this stage, public relations work was undertaken to inform those whose cooperation was needed. The specialist returned for about two months in each succeeding year to help develop the project with the BSU staff, the staff of the Ministry of Education's Training for Self-Reliance Project (TSRP; established in the early 1970s to handle various educational projects associated with the World Bank), and all others involved in the project.

In the Thaba Tseka district, pilot distribution activities were:

- Textbook distribution—from November 1982 to the end of January 1983
- Delivery of book lockers (delayed by procurement procedures, but lockers were in place by the time of the national distribution toward the end of 1983)
- Teacher in-service training and follow-up visits by the TSRP during February and March 1983.

During the time of the pilot distribution scheme, the NCDC and NCC continued to examine the selected books to determine whether they should be retained for national distribution. The MOE, BSU, and TSRP simultaneously were preparing for the national distribution by revising student enrollments in accordance with the latest information available from schools and preparing a distribution plan, which included full details on the enrollment of schools, location, and the roads and trails used to reach them. The list of persons responsible for administering the schools was updated (because of changes in personnel, however, they were later simply addressed by title).

By March 1983, it was decided to

- Retain most of the same titles for the national distribution
- Order books in May 1983
- Have the publishers prepackage the books according to distribution lists prepared by the BSU (the task of packing 1 million books was then beyond the capability of the TSRP and BSU); without the many months spent preparing the distribution plan, this process would not have been possible
- Box orders according to schools within parishes and determine the sizes of the boxes by the weight a person could reasonably lift (about 15 kilograms)
- Use TSRP trucks for delivery; all trucks had to have an officer from either the BSU or TSRP present to ensure that the delivery was carried out according to the plans and that the proper receipt invoices were signed
- Arrange follow-up visits by BSU staff where problems had been experienced
- Complete national distribution (started in November 1983) by February 1984—adjustments between schools were done during March and April 1984
- Ascertain that by the end of 1984 all primary students had benefited from books in the three core subjects and that teachers had benefited from teachers' guides
- Offer in-service training to the teachers, in spite of delays.

Implementation

The Book Supply Unit was set up as a section of the TSRP. The TSRP ran the book project until the BSU was created. The organization of both the TSRP and BSU is a functional one embracing the usual planning activities: examining objectives to be achieved, taking appropriate actions, and establishing unity of purpose. At the conclusion of the project, it is intended that the BSU will be transferred to the MOE, either as a separate unit or attached to an existing MOE agency. These and other alternatives are still under consideration. The manager of the BSU is responsible to the director of the TSRP who in turn reports to the Project Authority. The members of the Project Authority, which is chaired by the permanent secretary of education, are drawn from the various ministries associated with the project.

The director of the TSRP, apart from duties related to other aspects of the project, is concerned with general BSU policy and its implementation, major administrative matters, and project expenditures and receipts. He plays an important role in relations with school proprietors, with other authorities, and with the public in general. The BSU manager deals with day-to-day affairs, prepares orders, arranges for distribution, keeps appropriate records, and prepares reports at regular intervals. He also spends much time assisting school managers and head teachers in fulfilling shortages or the collection of surplus stocks.

The BSU accountant (plus one assistant) keeps all the financial records (except those involving procurement) and prepares invoices and statements to inform the director and manager of tardy or nontransmitted fees. Four clerks deal with stock keeping and warehousing and assist with distribution. The function of the BSU may best be described in relation to the basic functions of a publishing house: editing, production, marketing, finance, and publicity.

The BSU does marketing, financing, and some publicity. It is responsible for ordering books, calling for

tenders, and dealing with the Tender Board. It coordinates the other functions. What to publish is an editorial function handled by the NCDC. Production was, and to a large extent still is, done by the publishers from whom the books are ordered, but the IMRC does it for the newly introduced science textbooks.

Two person-years of technical assistance had been written into the project. Since late 1981, the services of a consultant have been available on a regular basis (four months each year) to assist in developing the book supply scheme. A full-time adviser was also attached to the project for one year only.

The services of the BSU are available for the distribution of other teaching materials produced for the Ministry of Education. In short, the BSU is charged with seeing that the appropriate books are in the right place at the right time.

Choice of Textbooks

The subjects selected for inclusion in the project were the core subjects of Sesotho, English, and mathematics for grades 1 to 7 in the Lesotho primary schools. Time became a factor, particularly since the new books were still far from ready for publication and there was an urgent need to establish a distribution system and procedures for supplying replacement books later. A system of gradual replacement would allow for the systematic introduction of new material year by year. Initially, therefore, emphasis was placed on textbooks which followed existing curriculums as closely as possible. Questions of local publishing were secondary, at least in the initial stages of the project. At the same time, cognizance had to be taken of the books most widely in use, the teacher's familiarity with them, and those books already in the pipeline for publication.

Local publishing and printing continue to be a concern. Expansion and modernization of equipment are taking place, and greater local participation may (subject to cost) become a reality. The proportion of local publishing will be considerably enhanced toward the end of the project with the introduction of titles to be published by the Ministry of Education.

Procedures

Formal procedures for choosing books were developed to ensure absolutely fair decisions open to rigorous scrutiny. The departments of the NCDC involved in the choice of textbooks were required to prepare a preferred list of textbooks (including teacher's guides and ancillary materials) together with a list of alternatives for use in grades 1–7. Publishers in the United Kingdom (with the assistance of the Publishers Association and the British Council) were invited to submit textbooks—particularly course books—in English and mathematics. Two British Council officers reviewed the submissions and rejected those which were inappropriate. The final selections were sent by the Publishers Association to the director of the NCDC in mid-1981, together with the reviewers' comments.

Publishers in Lesotho and the Republic of South Africa were similarly invited to submit appropriate books, including those in Sesotho. This invitation cast a wider net, because, in addition to indigenous publishers, many of U.K. origin are represented in South Africa and, in one case, in Lesotho. All submissions were scrutinized by the subject departments and panels of the NCDC according to a basic set of criteria. The results of the panels' deliberations were presented for consideration by a Book Review Committee composed of those directly responsible for the project and various technical experts.

Representatives of the two Lesotho publishing firms were included in the Book Review Committee as "observers." It was felt that because they were also the leading printers in Lesotho their local experience and advice would be invaluable and they could handle distribution for the Ministry of Education, at least in the initial phase. A short list of books from seventeen publishers was reduced to six publishers of first and second choice and a final list of books from three publishers. This process, repeated every year, ensures that all books are reassessed in the light of experience and that selection is not automatic. It also keeps publishers alert and sharpens competition.

Books Chosen: Comparison between 1982 and 1985

A timetable was drawn up in November 1981 setting deadlines for the various stages leading to final recommendations so that orders could be placed with the publishers early in 1982 for books to be in schools by the beginning of the 1983 academic year. During 1985, further choices were made when science and social studies were added, making a total of five subjects. These additions were made possible largely through savings—accrued to a great extent by the considerable drop in the value of the currency against the U.S. dollar. (One maloti was worth approximately $1.35 in 1981; it dropped to $0.35 by the end of 1985.)

In 1982, the committee's first choice for the 1983 Sesotho courses had been a new reading series specially prepared for local use. It could not be recommended, however, because not enough material was available for testing in the schools, the considerable amount of ancillary material was felt to be impractical, the scheme would need considerable in-service teacher training, and it was too costly. The local publishers played the greatest

part in the selection of alternatives. Because the books had been published for use in Lesotho, no adaptation was necessary. The books did not, however, compare well with a new draft syllabus in preparation. Teachers' books, where available, formed part of the proposals. The books ordered in 1985 for use in 1986 were the same as those chosen in 1982 for grades 1 through 7.

For English courses, in 1982 an adapted series of books was chosen for use in 1983 for grades 1 through 4; the first book had just been published, and the second was well advanced. The series was also used in nearby countries (Botswana and Swaziland) and had been well tested. It was therefore possible to recommend that the series be introduced simultaneously in grades 1 and 2. For grades 3 and 4, books currently in use were chosen to fill the gap until they could be replaced by the new series. For grades 5 through 7, a new series produced by the publishers for use in Botswana proved ideal. Teachers' versions were available for all students' books. The new English series for grades 1 through 4 was ordered in 1985 for use in 1986. The books for standards 5 through 7 remained in the form in which they were first introduced and were still considered excellent. Adaptation of the text and illustrations of the grade 1 through 4 series for use in Lesotho was made by the publishers in close cooperation with the staff of the English Department of the NCDC.

For mathematics books the first choice in 1982 was simply the best that could then be found. They were to be replaced gradually by a new series that was being specially written for Lesotho but that had been delayed by the controversy with the authors previously mentioned. In 1986, new books were introduced in grades 1 and 2. They were conceived as workbooks and will have to be ordered annually for the entire enrollment of these two grades. Considerable discussion took place about production standards versus costs. In view of the total outlay, this will have to be kept under review. The old books used in grades 3 through 7 will be replaced year by year. These will not be workbooks as such.

Enlargement of the Scheme in 1985

As previously indicated, the addition of science and social studies textbooks was made possible largely through savings from the heavy drop in the value of the maloti. The decision also depended on the World Bank's agreement to expand the scope of the project and on whether it would be affordable once Bank funding came to an end.

Discussions about the possibility of widening the scheme had taken place informally well in advance so that delays would be kept to a minimum. The subjects chosen thus completed the range of courses for which examinations were given at the end of primary school. These subjects had in fact been considered initially but had been dropped because of cost.

Science books for grades 1–3 were the first under the project to be published by the Ministry of Education. In arriving at the decision to do so, consideration was given to organizing and running appropriate workshops; writing, illustrating, and editing; producing appropriate teachers' materials; testing these materials in the field; producing books; activating the machinery set up for the selection of textbooks; and planning time factors, distribution, and cost.

Various aspects of book production and costs were examined at an early stage. Some adjustments were necessary when the work was put out to tender, but suitable tolerances had been built into the design so that the result was little affected. Where possible, settling major details of book design before the book is even written can be extremely cost-effective. The workshops were organized by the Science Department of the NCDC in January 1985 with editorial assistance from a major international educational publisher, which also provided the funds for this stage of the operation. Writing was initiated at the workshops and completed shortly thereafter, rough sketches were prepared, and photocopies were submitted for comment and preliminary approval. It became obvious that the books would not be ready by January 1986, and the timetable was extended for a year.

The question of testing was overcome simply by adding the words "Preliminary Edition" on the cover. The books were therefore tested nationally. Work on an accompanying teachers' book—one book for grades 1 through 3—will also be completed.

The selection for grades 4 through 7 was a series of books published in Kenya, which created complications of delivery through third countries. These books will eventually be replaced by locally published material. A previously used teachers' book, largely on agriculture, was also selected. Teachers' books based on the new syllabuses in grades 4 through 7 are in preparation.

The teaching of social studies begins in grade 4. The final choice was a junior atlas specially developed for local use. The atlas will be used in grades 5 through 7 but, because of the price, not in grade 4. It may also be used in junior secondary school, but different distribution and payment arrangements will have to be worked out because these copies cannot be considered as part of the project. The atlas will be ready for purchase before the project expires and will be introduced into the schools from 1987 onward. In addition, some five books (previously published and printed locally) were selected as teachers' references; these will even-

Table 13-1. ***Types of Books to Be Supplied—Plan at Appraisal***

Standard	*Types of books*	*Ancillary materials*
		I. First language: Sesotho
1	1 preprimer 2 initial readers 1 or two larger readers	Charts, workbooks, teacher's guide
2	2 or 3 readers	Charts, workbooks, teacher's guide
3	2 readers	Charts, workbooks, teacher's guide
4	2 readers	Workbooks, teacher's guide
5	1 reader	Workbooks, teacher's guide
6	1 reader	Workbooks, teacher's guide
7	1 reader	Workbooks, teacher's guide
		II. Second language: English
1	Nil	Charts, pictures, teacher's guide
2	Nil	As for standard 1 plus small workbook toward end of year
3	Nil	Charts, workbooks, teacher's guide
4	3 introductory readers, low vocabulary and high contents	Charts, workbooks, teacher's guide
5	2 readers	Workbooks, teacher's guide
6	1 reader	Workbook, teacher's guide
7	1 reader	Workbook, teacher's guide
		III. Mathematics
1	Workbook renewed yearly	Charts, flash cards, teacher's guide
2	1 book plus workbook renewed yearly	Charts, teacher's guide
3	1 book plus workbook renewed	Teacher's guide, workbooks optional
4	1 book	Teacher's guide, workbooks optional
5	1 book	Teacher's guide, workbooks optional
6	1 book	Teacher's guide, workbooks optional
7	1 book	Teacher's guide, workbooks optional

tually be replaced by new material. It is also foreseen that a teachers' guide will be prepared for use with the atlas.

Future Selections: Plans and Implementation

In addition to replacements already scheduled, thought is being given to introducing textbooks in such subjects as agriculture and home economics. These additions would fall outside the time period of the project and in the long run will depend on cost in relation to the recovery of funds. The initial plan of the types of books and materials to be supplied is shown in table 13-1.

With the exception of teachers' guides, it has proved impractical to supply much ancillary material. The supply of workbooks depends heavily on the availability of funds, because workbooks need to be replaced in full-enrollment quantities every year. This has had repercussions on standards of production. Many alternatives were discussed: cheaper papers for cover and text, no cover (self-cover), different printing methods and paper sizes, and asking students not to write in the books themselves but in separate exercise books. Although the desire to use local printing units was and remains in the foreground, arguments for and against were affected by several factors: the small quantities required for trial distribution, high unit costs, the high technical printing competence required, the availability of books published elsewhere at lower unit cost, questions of capacity and scheduling, and funding—100 percent of imported purchases would be covered by the project loan but only 80 percent of local purchases.

The decision in late 1984 to add science as an additional subject increased local content considerably. Not only were the first three science books the first books in the project to be published by the Ministry of Education but also the services of the IMRC were utilized in the production of camera-ready copy. The unit was too small to cope with the required volume of the printing and binding processes or to compete with private printing concerns. It could, however, handle the typesetting and the production of color-drawing to be passed on to the selected printer. In doing so, the considerable cost of origination was saved; the only charge was for the materials used in producing the camera-ready copy and of course for the subsequent processes.

Production and Manufacturing

Books are expected to last about three years, and production specifications take account of this—mainly in the kind of paper used and in the style of binding. Why three years? Largely because curriculums are in a

state of flux, and it is unwise to produce books of a more permanent nature. In Lesotho, production standards (and therefore cost) were factors in the final recommendations made by the Book Review Committee.

Paper

Questions of paper quality were taken up with the publishers when ordering the larger quantities required for national distribution. Choice of paper depends largely on method of printing, the length of the book, required opacity, color, and paper size. These interrelated factors may be further influenced by the size of the printing machinery and the available paper sizes. In some countries, however, the quality of the paper is of small consequence. One has to take either what is locally manufactured or what one can get. Some knowledge of paper—its use and manufacture—is essential.

Large pulp and paper mills exist in the region, and with the quantities of paper also being imported, supply is not a problem. The cost of local paper is, however, somewhat high in relation to world prices. A scheme for the supply of paper was prepared, but regrettably has so far not met with success. Some lending agencies had to decline on account of the downturn in the world economy and the consequent shortage of funds. In one case, the would-be lenders based their decision on incomplete information, which led to an inaccurate appreciation of the thoughts behind the plan and on project implementations. As a result, the lenders appeared to be at odds with the Ministry of Education and the World Bank.

With the project drawing to a close, new approaches will be made. It is hoped that some external assistance will be forthcoming so as to avoid incurring additional costs to the government and to allow the project more breathing space. A number of agencies—UNICEF and Unesco, for example—are interested in assisting textbook projects. Approaches are usually possible either directly or through the local office of the United Nations Development Programme. Bilateral action may also be considered.

Composition and Printing

The texts of the new science books were composed on a desktop computer, with camera-ready printout from a laser unit. During 1983, the capacity of printing facilities in Swaziland and Zimbabwe was investigated, as well as the quality and cost of their work, particularly in connection with books imported into Lesotho. About 50 percent of the books could be printed in Zimbabwe and meet the criteria, particularly if all costs except that for paper were compared. There were, however, consequent problems, such as the movement of paper, transportation, and packing of books for schools. Furthermore, some books needed to be redesigned to accommodate paper sizes. In short, a decision to print elsewhere would be a risky one. Very favorable prices were subsequently obtained for printing in Singapore and Hong Kong, but the fall in the value of the maloti influenced that decision. There were also some problems in relation to scheduling in that books would have to be ordered much sooner.

The question of where to print is under constant review. The present changes in the distribution system will have some impact but will not fundamentally change the present tried procedure. Teachers' guides are usually obtained from the same sources as the books to which they apply. Because quantities are comparatively small and well within the production capacity of the IMRC, teachers' books for science are intended to be printed there, adding to the local input.

Binding

All the books used in the project are either saddle-stitched or thread-sewn. When printing in Zimbabwe was considered, specifications for some of the longer texts were altered to produce two books (which could be saddle-stitched) rather than one book (which would need thread-sewing and therefore be prohibitively expensive). Perfect (glued, unsewn) binding should be used only after careful consideration. Perfect binding works well under controlled conditions, but when these cannot be achieved or something is overlooked, savings may well be eroded. Side-stitching may be unavoidable if other methods cannot be used. Depending on local conditions, other factors to be considered are the kind of wire, the use of certain adhesives or types of paper to repel insects or rodents, and the effects of humidity.

Distribution

Because the project consists entirely of supplying prescribed textbooks and book lockers to a captive market, marketing considerations could be reduced to analyzing organizations (proprietors of schools, facilities), calculating enrollments (size of the market), and ascertaining the influence of geography (transport and communication).

Lesotho is divided into ten districts. Although distances are not great, in some mountainous areas transport is extremely difficult. It was therefore decided to make a trial distribution in one of the more difficult areas—the district of Thaba Tseka. The parish was selected as the unit for distribution and accounting. All

schools outside parishes were treated as individual units. Enrollment was calculated for each grade in all primary schools. In 1986, there were 1,130 elementary schools, 220 parishes and other units, and a total projected enrollment of 324,850 students: 84,350 in grade 1; 60,750 in 2; 50,750 in 3; 42,050 in 4; 34,650 in 5; 27,750 in 6; and 24,550 in 7.

Distribution was conducted in four phases:

1. Trial distribution in the district of Thaba Tseka. This district contained schools in a wide range of accessibility (from easy to difficult). Because it was also the newest district, there was a political aspect in the choice.
2. Distribution on a national scale. All books were delivered to nine districts, and replenishments and new titles only to Thaba Tseka.
3. Nationwide replenishments to replace losses, to cover increases in enrollment, and to introduce new titles.
4. Nationwide distribution based on requisitions from school managers and head teachers instead of projected quantities (as was done for the three previous phases). New titles will still be distributed on the basis of projections.

Phases 1 and 2 went as planned. A different course was taken for the other phases for several reasons. Because the life expectancy of the books was about three years, there was no need for a distribution covering the complete enrollment during the third year. During the third year, considerable quantities of the replenishments sent to the schools were returned to the BSU-TSRP warehouse. The supply of book lockers, together with the initial requirement (later relaxed) that no books be taken out of school, kept books in good shape except in Thaba Tseka, where book lockers had been late in arriving. Furthermore, by the third year there were enough books in the system and saturation appeared to have been reached. Shortages might still exist in some schools and surpluses in others, but school managers and head teachers were encouraged to help each other out. A nationwide inventory of textbooks was made in December 1985.

It had been hoped that one of the two local publishers would handle the packing and distribution of the books, at least for the trial stage. Because of a difference of opinion, however, the idea had to be abandoned. It was decided that the TSRP and BSU would undertake the task, which incidentally would give them valuable experience.

During phase 1, 50,000 books were sent by the various publishers to the TSRP-BSU warehouse, where they were packed for distribution to Thaba Tseka. A truck was hired for part of the distribution. Project staff accompanied the driver. The distribution of textbooks took place between November 1982 and January 1983. Project staff gained much experience, and warehousing the small number of books was no problem. The bulk of the packing material was obtained from local stores in the form of used cartons. Distribution of book lockers to Thaba Tseka was complicated by procurement procedures and took place later in the year. During phase 2, because the packing of the books on a national scale was beyond the capacity of the BSU and TSRP, it was decided to have the publishers pack the books according to prepared packing lists. Approximately 1 million books were delivered to the TSRP-BSU warehouse and sorted by district (approximately 8,000 parcels of 15 kilograms or less). Distribution took place in November and December 1983, using TSRP transport only, to 220 locations.

The school manager in each parish mission distributes the books to the head teachers. The books are then made available to all students in grades 1 through 7, but generally they remain on the school premises. The cooperation of the school managers (who are in administrative charge of the schools in their parish) was enlisted after consultation with the education secretaries of the various proprietors (religious groups) and school managers themselves, as well as some head teachers. The school managers therefore represent a very important link, and their cooperation is of the utmost importance. For this reason, many meetings were (and are) held with them. For reasons of clarity and to avoid misunderstandings, guidelines were drafted for the people conducting these meetings. The radio is sometimes used to inform school managers when delivery is due so that they can make appropriate arrangements.

For the most part, head teachers collect their consignments from the school managers. Sometimes the school manager will deliver; it is largely a question of cooperation. In some areas, missions have transport available—often a four-wheel-drive vehicle. In more remote, geographically difficult, and probably poorer areas, the only transport may be horse or foot. Hence weight limitations on parcels are important.

Phase 3 followed the same pattern as phase 2, except that distribution was confined to replacements and new titles. Volume was therefore considerably smaller (about 400,000 books).

Phase 4 has now been reached. Packing will be done by the TSRP and BSU on demand, except that new titles will still be dispatched in quantities based on projections. Alternative distribution systems were considered: mail, food, beer, and cigarettes all find their way to remote locations; the post office, some commercial firms, and certain food agencies (local or international) have

their own distribution systems. All these alternatives were found to be unsuitable for various reasons—usually timing or cost. There was also a serious wish to build up expertise. Even a helicopter was considered for exceptionally difficult areas.

Warehousing

Major considerations for warehousing included the seasonal nature of textbook distribution and the consequent relative emptiness of storage space for a large part of the year; the utilization of warehouse space for items other than books; and logistical needs—regional depots, staffing, and security. The BSU was fortunate in that a well-built warehouse had been constructed for the TSRP some years before and there happened to be room for the storage and packing of the 50,000 books for Thaba Tseka (phase 1). For phase 2, when storage space was required for a large number of previously packed books, additional space was rented.

Turnaround between delivery from the publishers and dispatch to the parishes was prompt. The supplier of the largest number of cartons cooperated in scheduling deliveries, so there was always room to assemble cartons from all publishers into batches for parishes and districts before trucks were loaded. Further BSU needs (the storage of surpluses—phase 3) were accommodated in the old warehouse, to which a mezzanine was added, but such stores will eventually be transferred to a new warehouse to be built as part of a later World Bank loan when the Book Supply Unit becomes a School Supply Unit with wider responsibilities. This new warehouse will coincide with phase 4 of the distribution plan. Meanwhile, books being reprinted will be stored largely at the publishers' own warehouse, to be transferred when the new warehouse is ready.

Because each parish mission was a distribution center and became a small storage area, the need to organize additional warehouse space in outlying parts of the country was avoided, at least in the early stages. This question is, however, continually under review. In the meantime, school managers have been encouraged to carry a little stock and have been issued book lockers in which to maintain surplus.

In view of unavoidable differences between the number of books issued to schools (projections) and the actual enrollment, it was hoped that head teachers could exchange books through the school manager and that stocks at the BSU would be used only if demand could not be met at the parish level. This system has worked fairly well. School managers have many other things to do, and a modicum of training is still required. Although stock keeping may not have been perfect, there have been no obvious losses except through some wear and tear and natural disasters such as a fire. By printing "Property of the Ministry of Education" on the books it was made obvious that they were government property.

Administration

Forms were designed for various stages of the distribution process, some of which were subsequently produced as computer printouts:

- Packing instructions (for the publishers—now computer printout)
- Invoices (to the school managers of parishes and others—now computer printout)
- Textbook delivery note (from the BSU to the parish)
- Textbook receipt note (from the head teacher via the manager to the BSU)
- Textbook amendment note (for the exchange of books)
- Fee receipt note (from the head teacher to students)
- Goods consignment note (for other items sent by the TSRP and BSU to schools).

Calculations of quantities were facilitated by the use of data in the mainframe computer used by the Ministry of Education's Planning Department. These data had been collected from schools by questionnaires on enrollment and number of teachers. The first computer enrollment data were produced at the end of 1981. Enrollment projections were made for the year 1983—the year of the pilot project. Enrollment increases were calculated according to information supplied by the Planning Department.

A two-year projection became the norm, although repeated attempts were made to reduce it to one year. With a two-year projection, the books needed in schools at the beginning of, say, 1986 had to be ordered no later than June of 1985 (or earlier, depending on the printer). Estimates (or quotations) were needed some time before this for the Tender Board to consider

Some shortages were experienced for the trial distribution in Thaba Tseka, but since quantities were comparatively small and were for the most part supplied from stock, no insuperable problems were encountered. Nevertheless, the experience alerted the project planners to the necessity of adjusting enrollment projections for subsequent years. Later, when the evaluation of the pilot distribution found larger enrollments than expected, increases were calculated for each grade separately.

A loss factor was built into the calculations to take care of books lost for various reasons. Based on experience elsewhere, this was estimated to be 30 percent of books at schools for grades 1 through 3, and 15

percent for grades 4 through 7. These were eventually found to be overestimates, largely because of the protection afforded by book lockers combined with the restriction on taking books home, and the excess stocks were used to replace worn-out books. Allowance was made for schools which had not made statistical returns, and adjustments were made from existing stocks.

Quantities of teachers' books were similarly based on computer enrollment data and were annually adjusted according to the intentions of the MOE as published in the *Education Sector Review*. Generally, enough books were ordered for the first national distribution to allow for several years' supply. Copies of the students' books were also made available for use by the teacher.

Evaluation

An evaluator visited the pilot area to assess the distribution process and the effects on attendance. He found that primary enrollments were about 14 percent higher than those forecast from the previous year; school attendance was more regular; teaching had been greatly facilitated; teachers had benefited from in-service training but they felt that three days of training were insufficient; lockers were a good investment because the book losses had almost stopped since their arrival; national exams at the end of the first year saw a great improvement in the children's results—in fact, 100 percent more children from this rural district had obtained first- and second-class passes; and book-user fees appeared to be set at a reasonable level because more than 90 percent of the children from this poor rural area had been able to pay.

The evaluator also found many problems: Some schools had not expected the government to supply textbooks and had obtained their own books, which children were expected to purchase in addition to paying user fees for the government-provided texts; books were required to remain at school, although allowances were made in the upper grades for books to be taken home; in Thaba Tseka, books suffered as a result of the late delivery of lockers; and more involvement of the inspectors in teacher training was necessary. Much thought has been given to future evaluation. Very detailed questionnaires have been prepared as a basis for internal discussion.

Finances: the Revolving Fund

A system was established whereby students can rent their books: in grade 1 for M2.00, in grades 2, 3 and 4 for M3.00, and in grades 5, 6, and 7 for M5.00. No rental fees are charged to students of very poor families who in the opinion of the head teacher cannot afford to pay them. These decisions are reviewed by the school manager before submission is made to the MOE and the BSU. No charge is made for teachers' books or for their copy of the students' book.

The process of payment and recovery of fees was made official through appropriate legislation. The BSU established accounts at existing bank branches in major centers where the fees collected by the school managers from the head teachers are deposited. These funds are transferred at regular intervals by the bank to the interest-bearing account in Maseru. The BSU also accepts funds at its offices from head teachers or school managers who prefer this method of collection.

Head teachers are required to issue receipts for each fee received from every student. Receipt books for this purpose are issued by the BSU to all schools. Invoices are addressed by the BSU to all school managers, showing what is due from all schools in their parish, including the collective totals. Questions of security naturally feature in decisions as to the best method of collecting funds.

Since book supplies are based on projections, there will be differences between calculated and actual enrollment and consequently between the actual sums due from the various schools and the invoices. As with stocks of books, there are shortages in some schools and surpluses in others, but totals on a parish or national level are close to calculation. Differences can always be reconciled against the statistical returns made by the schools, although it may not be possible to do this until six to nine months after invoice.

The problem will eventually resolve itself when phase 4 of the distribution plan has been reached (the delivery of books against requisitions from head teachers or school managers). In any case, a minimal allowance of 10 percent was built into appraisal calculations to compensate for the exemption from fees for poor families; the free provision of teachers' guides and student books for teachers; and administrative problems in the transmission of funds.

No system is immune from slow or forgetful payment, and appropriate action has been necessary in a few cases. In the final analysis, however, results have been very satisfactory, with receipts at the end of 1984 in excess of 80 percent of the total invoiced. The interest earned by the deposited sums has increased this percentage to slightly more than 90 percent, the figure initially anticipated.

From 1984 on, receipts were fairly steady, showing a slight annual increase, reflecting, in turn, an enrollment increase. The cost of books has fluctuated considerably: in 1984 there was a large purchase for the first national distribution; in 1985 replenishment only; and 1986 would have been similar to 1985 but for the fact that two extra subjects were included. The inclusion of workbooks for mathematics in grades 1 and 2 will

mean the purchase of books for every student in those grades every year. New titles will replace old ones for some time to come. In view of the three-year life of books, it would appear that expenditures will be high every three years. Against this, however, there has been a steady buildup of stocks which may be used to replenish supplies. Small stocks of book lockers will serve the purpose for some time.

Achievements of the Project

Implementation of the Lesotho textbook project was assisted by the long gestation period of two and a half years between first thoughts and project appraisal. During this time, the dialog between the Ministry of Education and the World Bank gave all those concerned (school managers, head teachers, and others) the opportunity to appreciate and digest all the issues. Additional advantages were that the project was handled by a unit—the Training for Self-Reliance Project—already experienced in working with the World Bank and statistics were collected and organized on the mainframe computer attached to the Planning Department of the MOE.

Among the highlights of the project were its evolutionary approach, considerable public-relations exercises, continual detailed planning and "number-crunching," and the stubborn determination to have books in the right place at the right time. A very important factor in the success of the project was the decision to supply book lockers, most schools having either insufficient storage space or none at all. As a basis for distribution, there was a detailed mapping process. The walls of an office were completely covered with maps on which routes to schools were planned with pins and string. The packing of books for each school was done by the publishers according to prepared instructions until the project could tackle this itself by 1986. A computer was used to produce these instructions, consequent invoices, and other items, and eventually the project acquired its own desktop computer. The project was further expanded by the inclusion of two extra subjects. Not least, a team was developed able to manage and run the operation—the Book Supply Unit.

Any divergence from the original plan was due to continuous review of the existing structure. The project changes (usually in response to unforeseeable events) received the full support of the World Bank, whose flexibility in this regard was much appreciated.

Instead of having full-time technical assistance, the project had a textbook specialist as a consultant. Having good people in key positions gave stimulus for development. Nevertheless, care was taken in making changes. Time is needed to get used to a system; leeway or tolerances must be allowed for in plans for development. A project does not consist only of the facts and figures presented in reports: leadership needs to be provided. This is a dynamic process which has to be shaped to fit the moment (difficult to categorize) so that people will acquire a sense of pride and achievement and the ability to carry on by themselves. Leadership has been evident in the project in that, in the key positions, responsibilities were taken seriously. Appropriate delegation allowed others to get on with their specific tasks, subject only to regular managerial and administrative procedures.

The major achievement of the Lesotho textbook project has been simply that objectives have been realized—perhaps not exactly in the way foreseen, but near enough. Books in the three core subjects—shortly to be increased to five—are now available to all students, and the revolving fund to be used once the credit period has expired is at present sufficiently large to provide for the replacement of books.

Regional Development of Textbooks: The English-Speaking Caribbean

Pat E. Malone

Developing textbooks for use in many countries carries visions of a large-scale, expensive, highly bureaucratized process. It also implies a long-term operation, with much discussion over content, production, cost, and distribution. In the normal context of textbook development within one country, there can be many discordant views which might jeopardize the successful completion of any textbook. How does one decide between opposing viewpoints, and who makes the decision? This situation becomes magnified in a regional situation involving several countries. Individual views can become hidebound policies of ministries of education and make it most difficult to resolve differences.

The subject of a textbook can make content decisions either relatively easy or exceptionally difficult. If the content deals with culture and local styles of living, agreement on content and how it is presented will not be easy. Many regional differences may exist within one country; yet for the textbook to be appropriate for the students, it must reflect their local situation.

The case study in this chapter is unique because it tells how textbooks were successfully written and published for fourteen English-speaking Caribbean countries in a subject, home economics, that is culturally quite sensitive. These countries, although they have many common elements, also have a heritage of jealousies and rivalries.

Professionals in the subject worked through their professional organization (representing the fourteen developing countries) with a corresponding organization from a developed country. This grass-roots approach (rather than the usual lending-agency-to-government method) had several positive features:

- The participants were motivated because they would be the users of the texts.
- Volunteer talent and energy were utilized.
- Relative freedom from cumbersome bureaucracy allowed the organizations faster response to needed changes.
- The process of book development was completed in a short time. This process included needs assessment, training in writing, editing, graphics, use of local personnel, cross-national coordination, and ongoing evaluation. Yet the total development cost was relatively low.

Because of these features, it is worth examining the project to determine whether it is an isolated case or a viable alternative to the usual process of textbook development.

Background

The countries which comprise the English-speaking Caribbean are Antigua, Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, and Turks and Caicos. The total distances are considerable, ranging from the South American coastline to the Central American coastline and up to the North American coast.

These countries share a heritage of British colonialism. As a result, their educational systems have been modeled after the British where the secondary level is divided into two segments—junior secondary and senior secondary. (The one exception to this system is Turks and Caicos.) The duration of each segment varies from country to country. The number of years at the

primary level ranges from six to eight, with the majority having seven.

The junior secondary range is three to five years. Six countries have five years and six countries have three. In all but four (Bahamas, Barbados, Belize, and British Virgin Islands), however, the junior secondary entrance level is at age twelve. Frequently, this is referred to as eleven plus. The senior secondary level ranges from two to five years, with the majority at two years.

Generally, there is a common entrance examination at age eleven plus for admission to secondary school. This is set and marked by the individual country. The students are required to sit for various external examinations, however. The London City and Guilds Examination, the Royal Society of Arts Examination, and the Associated Examining Board General Certificate of Education Examination are examples of external examinations which are mainly for students of technical schools. The most familiar is the General Certificate of Education, Ordinary Level (O Level), which is written at the end of grade 11 and has international recognition. It is set and marked by personnel in the United Kingdom. If the student wishes to attend a university, then a further two years must be completed and another examination—General Certificate of Education, Advanced Level (A Level)—set and marked in the United Kingdom must be taken.

As the countries gradually obtained their independence from the United Kingdom, an external examining authority was viewed as an infringement of the national educational system. Of more importance, the content of many of these examinations was frequently inappropriate to the Caribbean. If a student used correct Caribbean examples that the British examiners were unfamiliar with, then frequently these examples were marked wrong.

The countries worked together to establish the Caribbean Examinations Council (CXC). It not only acts as a regional examining authority, but also is charged with curriculum development in the various subjects. Each country has a CXC advisory committee with members from the teaching profession and the general community. Development and marking of different subjects are being phased in gradually; home economics was scheduled to be in effect by June 1982.

Home economics covers general principles applicable to any country, but its content must reflect the country and its culture. The stated goal is to improve the quality of individual and family life. Content includes such topics as consumer education, family living, family economics, health education, nutrition, food preparation and service, and clothing and textiles. Whereas, say, the benefits of vitamin C will be consistent in developed and developing countries, local food sources high in vitamin C will vary from country to country depending on the agriculture. Family living is particularly reflective of a country and its culture. For this reason, textbooks written for one country usually are not useful in another because they do not reflect its conditions. As of 1979, most of the home economics textbooks being used in the English-speaking Caribbean were from the United Kingdom, Canada, or the United States. The few Caribbean books available were generally concerned only with foods and food preparation. Often there were no teaching materials for teachers or students.

Evolution of the Project

In 1976, the International Federation for Home Economics held its Thirteenth World Congress in Ottawa, Canada. One resolution was to encourage home economics associations to develop "twinning" relationships. Twinning was viewed as an opportunity to develop closer ties between home economics associations of developed and developing countries and to further the general goals of home economics education. This twinning mechanism was also perceived as a useful tool for bringing about cooperative projects between the partners.

The Canadian Home Economics Association (CHEA), which was particularly supportive of this idea, encouraged local affiliates to form international development committees. In 1978, the CHEA received funding from the Canadian International Development Agency (CIDA) to run an international development workshop. This brought together foreign students studying home economics in Canada, home economists from across Canada, and guest home economists from other countries. The workshop was so successful that it has become an annual event.

That same year, the Caribbean Association of Home Economists (CAHE) requested general as well as specific professional assistance. The CAHE is a professional organization of home economics educators with members drawn from the fourteen English-speaking countries in the Caribbean. The CAHE's request was forwarded to the CHEA, which then approached its largest affiliate, the Toronto Home Economics Association (THEA), with the suggestion that it twin with the CAHE. The request met with a favorable response because THEA had just formed an international development committee and about 10 percent of Toronto's population was West Indian. The president of the CAHE attended the 1979 CHEA International Development Workshop for discussions with the THEA representative, and twinning was formally announced between the two organizations. This was the first twinning relationship to be established.

Although both are home economics associations, the composition and structure of THEA and the CAHE are

quite different. THEA has a membership of more than 650 professionals, who work in industry, government, business, and education (about 30 percent are in education). Eight monthly newsletters are sent out, and eight meetings are held each year. Membership must be renewed yearly by mail. The CAHE has a membership of between 150 and 250, of whom 90 percent are teachers. Ideally there are members from each of the fourteen countries, but this varies from year to year, as do the membership numbers; in 1979, the CAHE had no members from the Bahamas. The CAHE holds a biennial conference (in a different country each time), and renewal of membership is based on attending this conference. No renewal notice is sent by mail. One magazine is printed every two years, but members do not automatically receive it as part of their membership. Financial support comes from membership fees as well as from the sale of magazines. Communication is difficult because of lack of funds and great distances.

Discussions about twinning were held between the CAHE president and the THEA representative. The CAHE demonstrated willingness to twin but indicated that twinning was not going to solve its immediate needs. More direct help was requested—equipment, supplies, and the creation of suitable textbooks that reflected the full scope of home economics in the Caribbean. The creation of textbooks was considered a project that could be developed cooperatively—as opposed to the concept of donor-recipient that would pertain to equipment and supplies. In any case, THEA was a nonprofit organization that could volunteer human capital but not money.

The CAHE president felt the most urgent need for texts was at the junior secondary level—in conjunction with the development of the home economics syllabus by the CXC. The texts would serve two functions: help teachers to teach their students and, on a broader level, reach adults in the home through their children. To serve these two functions, the books needed to be very inexpensive and readily accessible. It was agreed that THEA would spend the fall of 1979 looking for funding and designing a cooperative plan to develop the desired texts.

THEA (through the CHEA) approached CIDA for funding. A proposal submitted to CIDA was accepted in January 1980. One obvious difficulty in developing the proposal was that it was done in isolation by one partner with only one telephone call to the CAHE president to discuss the contents. The need for closer dialog between the twins became evident in subsequent misunderstandings of, and additions to, components of the proposal. Funds were not available at the time to facilitate this dialog. A recommendation for closer initial collaboration has benefited subsequent twinning projects by other CHEA affiliates.

The plan for the project was to be completed by December 1981, with a preliminary meeting in February 1980 between the CAHE president and secretary and two THEA cochairmen to discuss the stages. In April, a conference in Antigua (where the president resided) would bring together the members of the CAHE executive board (who were from different countries) and the CAHE representatives from all fourteen of the Caribbean countries. The plan would be presented to them, along with a specified quantity of survey questionnaire number 1. The purpose of the survey was to evaluate current educational materials and to determine what levels and topics were most in need of development and revision. The survey was also to identify resources and possible writers. Each representative would return to her country and distribute the questionnaires to home economics teachers for completion and return to the CAHE president in Antigua.

A rough draft of questionnaire number 2—to identify Caribbean life-styles—was circulated to the executive board for discussion and finalization. This questionnaire was for use by the writers and would be sent from and returned to THEA. Each representative and CAHE executive would receive a quantity of copies (roughly proportional to their country), which would then be divided among other home economics teachers to administer to a sample population.

A Canadian consultant, a home economist with teaching experience, would be hired for eighteen months to live in Antigua and facilitate the writing of texts throughout the Caribbean region. The resulting manuscripts would be multicopied by THEA, sent to the Caribbean countries, and pretested in the classroom. The manuscripts would then be revised (as indicated by the pretest), and camera-ready copies for printing would be delivered to the CAHE by December 1981.

During the preparation of the proposal there was much discussion of whether the texts should be printed in Canada. On the one hand, it could be argued that the books would be quickly printed and ready for use. On the other hand, there was concern that this could be perceived as interference by outside ministries of education and that it would be preferable to have them printed in the Caribbean region, even if this caused a delay. Although this latter alternative was the final decision and was written into the proposal, the CAHE president and other executive board members did not understand what was involved, and THEA members did not perceive this lack of understanding until later. Dialog during the development of the proposal could have clarified this problem. The budget for the project was to be Can$99,000 from CIDA, Can$3,000 from THEA, Can$42,000 in kind from THEA, and Can$61,500 in kind from the CAHE (in kind means volunteer service). The final figures were Can$102,728.50 from CIDA, Can$4,100.96 from THEA, Can$60,000 in kind from THEA, and Can$65,000 in kind from CAHE.

Process

The first meeting in February between the THEA co-chairmen and the CAHE president and secretary revealed problems as a result of developing a plan when there had not been adequate communication. The president felt that there should be a CAHE consultant as well as the proposed Canadian consultant. Although this was not in the budget as approved by CIDA, some artistic rearrangement was managed to satisfy her concern. The solution to this problem illustrated the need for flexibility among partners as well as flexibility in the plan itself.

From February to April, the job of the CAHE president was to communicate the plan to her executive board and to notify the CAHE representatives of the April Conference. THEA personnel were to hire a Canadian consultant and to prepare finished copies of questionnaire 1 and a rough draft of questionnaire 2. Because she would play a pivotal role in implementing the plan, it was hoped that the Canadian consultant would be hired in time to attend the conference so that the executive board and the CAHE representatives could meet her.

The April conference in Antigua served a number of purposes. It was an opportunity for the CAHE executive board to meet and discuss other business in addition to that of the project. It allowed THEA personnel to meet all the members of the CAHE executive board and CAHE representatives, and it allowed the CAHE executive board to select a CAHE consultant—the president herself was selected.

The CAHE assured its representatives that a letter would go out to all the countries' ministries of education explaining the project and requesting their support. Unfortunately, these letters were never sent, and ministries of education subsequently heard of the project in an informal manner and at different stages. In some instances, the local writer was with the ministry; in others, THEA personnel approached the ministry when they visited the country for a workshop. At two of the conference-workshops, the minister of education opened the proceedings. Subsequently, at a regional meeting of the ministers of education, the project was discussed as a viable way of developing textbooks. All the ministries were most cooperative when approached.

The Canadian consultant arrived in Antigua at the beginning of July and two weeks later, for personal reasons, was forced to resign. This immediately put the project into a crisis. The decision had to be made whether to restructure or cancel it. Restructuring it would mean operating it from Toronto, with THEA personnel going down to the Caribbean more frequently to perform the role of the Canadian consultant. This method of operation was not congenial to CIDA, but the decision was made to continue the project. A consequence was that the role of the CAHE consultant assumed greater importance.

In retrospect the resignation of the Canadian consultant worked to the advantage of the project. Although the Caribbean countries have much in common and work closely together in many areas, they are still sovereign states within the region. Interisland jealousies have existed in the past, and this heritage of rivalry is reflected in the feelings of many of the nationals of each country. Had the consultant been located in Antigua for eighteen months as was planned, she would have been perceived rightly or wrongly as being closely aligned with the participants in that country. Because of the restructuring, the THEA personnel were perceived as being neutral, especially as the Toronto Caribbean community consisted of ex-nationals from all fourteen countries.

The restructuring required a THEA person to act as project administrator and liaison with the CAHE. It also necessitated hiring a writing specialist, arranging formal workshops on writing and editing techniques, and bringing together writers in one location (Previously the plan had been for the Canadian consultant to move from country to country and from writer to writer.)

During the fall of 1980, questionnaires 1 and 2 were tabulated. The project administrator met with the CAHE consultant to discuss the revised structure in Antigua and to plan for the writing workshops. The first workshop was arranged for January 1981. But there was difficulty in communication over the selection of the writers. The CAHE consultant was of the opinion that they had already been fully identified in questionnaire 1. That was not the case: some names had been suggested, but nothing had been finalized. THEA felt that the CAHE consultant should select the writers in consultation with the executive board

The CAHE consultant made two suggestions that, again in retrospect, were wise. One was to select the writers from as many countries as possible to ensure broad representation; the rationale was to gain more acceptance for the books with the various ministries of education in the knowledge that their local people had been involved. The second suggestion was to hold the workshops in different countries—for essentially similar reasons.

The CAHE consultant identified and contacted the twenty selected writers, who represented ten countries out of the fourteen. Each was to receive an honorarium. All were teachers essentially without writing experience. Often selection was based on who the consultant knew in the country or who was the head of the local home economics association. Much prestige was accorded to the writers selected.

It was decided to hold the first workshop in Saint Lucia. In preparation, THEA hired a writing specialist

who was also a home economist to provide training in writing techniques and simple graphics for the teachers. Later, there would be a workshop on editing techniques. THEA prepared kits for each writer, including such materials as clipboards, paper, graphics, and writing equipment. Also included in the kits were the results of questionnaire 2 identifying Caribbean life-styles.

At the January workshop in Saint Lucia (held over a weekend under the direction of the writing specialist), the writers divided themselves into seven groups representing the seven subjects identified in questionnaire 1. They used as a guide the CXC home economics syllabus, the results of questionnaire 2, their own preferred reference books, and their teaching experience. They also identified the need for a glossary—because certain foods or practices were called by different names in different countries. By the end of the weekend, they were to have written one chapter of their chosen section. The degree of dedication and mutual support shown by these women was truly commendable.

Between January and March each writer was to complete half of her section and send it to the THEA writing specialist for word processing. These manuscripts were then to be taken to Barbados in April and used for the one-day editing workshop. Each writer learned editing techniques and corrected her own manuscript. This workshop was arranged to precede the CAHE biennial conference so that it would allow the writers to attend the conference and do some public relations with the CAHE members about the development of the texts. Some of the writers were elected to the CAHE executive board.

As the manuscripts developed, THEA and the CAHE realized the need for better graphics to make the books more appealing. This had not been allowed for in the original budget, and so it was necessary to go back to CIDA for further funding. The funds ($19,800) were granted, and a one-week graphics workshop was planned for July in Trinidad. A graphics specialist who was also a home economist was hired. Six of the writers who had exhibited drawing skills agreed to participate. All writers indicated in their manuscripts what drawings, sketches, and tables they wanted. It was hoped that by July all the manuscripts would be in Toronto and on the word processor so that the graphics could be completed and the project would still be on time. Of the twenty-one sections, however, only two-thirds were completed by July. Sections were still being sent to Toronto as late as December 1981.

The objectives of the graphics workshop were twofold: to train the participants in graphic skills and ensure that the graphics for the manuscripts reflected the same Caribbean style. Every participant received a set of graphics materials. Although they worked late each night in an attempt to finish all the graphics for the books, it was impossible in the allotted time. Special equipment had been needed, and it was planned to leave this equipment with the CAHE to assist in the preparation of graphics for their magazine. At the end of the week, one of the members residing in Trinidad agreed to do further work using this equipment and to forward the results to Toronto. From August to October, further manuscripts were received and put on the word processor, and two THEA personnel worked on graphics to prepare the manuscripts for pretesting.

Each writer was sent two sections—her own and one other—along with evaluation forms. The writer had to contact several teachers who would either read the material and comment or teach a lesson from the material and comment. These comments were then returned to the THEA writing specialist who, in conjunction with the CAHE consultant, reviewed them and made corrections on the word processor. In addition, representatives from the Roman Catholic Church in Saint Lucia read the section on family living to determine whether it was suitable for Catholic Caribbean countries. The sections on nutrition and food and food service were read for accuracy by the Caribbean Food and Nutrition Institute (CFNI) in Jamaica.

Although this pretesting was planned for September and October, in fact the first set was not sent out until October and the second not until December and January. This process took until April 1982 to complete. The responses to the pretesting were most revealing. Most of the corrections were minor with the exception of the sections on nutrition and food and food service. The pretesting by teachers not involved in the writing brought forth comments such as, "I learned as much as the students" or "I never knew what parasites were before," indicating a further value of the texts.

The major difficulty revealed by the pretesting was that the sections on nutrition and food and food service proved unacceptable to the CFNI as well as to some of the other teachers. One difficulty was that the Caribbean was in the process of going metric whereas all of the food preparation was in imperial measures. Then there were other passages in the nutrition section that had not been sufficiently addressed. The CFNI offered to help revise these passages. The CAHE consultant was in agreement, and so the project administrator and writing specialist spent one week in March working with the CFNI on the revisions.

From April to June 1982, THEA personnel worked on the remaining graphics, revisions, and proofreading to prepare the camera-ready copy for *Caribbean Home Economics in Action*, books 1, 2, and 3. This copy was sent to all writers and the CAHE executive board for two reasons: it was felt that all would like to see the final product, and there were some reservations about the printing. THEA felt that the camera copy could serve as

a model from which each country might print if, for some unfortunate reason, the CAHE was unable to arrange for regional printing and distribution. In June 1982, the CAHE signed a contract with Heinemann Educational Books (Caribbean) Limited to print and distribute the books. The CAHE instructed THEA to send the camera copy to Heinemann Educational Books in Jamaica, and THEA complied.

Contact with Ministries of Education

Originally THEA felt that most of the communication about the project would be done in the Caribbean by the CAHE executive board and by writers through their respective ministries of education. But it became clear quite quickly that many of the participants lacked influence with their ministries of education and required assistance from the CAHE. The CAHE, however, was not in a position to lend this assistance to most of the representatives and writers because of a lack of direction within the CAHE executive board. As a result, the task devolved onto the THEA representatives every time they were in the Caribbean. These representatives viewed themselves as professionals working with others of their profession; that they were perceived instead as Canadians representing CIDA, however, seemed to work in their favor. Consequently, THEA personnel arranged to meet with the staffs of ministries of education in the company of CAHE writers or representatives.

Meetings were held with the staffs of ministries of education (or the permanent secretary) of Antigua, Barbados, Jamaica, Saint Kitts and Nevis, Saint Lucia, and Trinidad and Tobago each time THEA personnel were in the country. That the husband of one of the writers was then minister of education for Saint Lucia was also helpful because through him news of the project spread to ministries in countries that THEA did not visit. THEA personnel also held meetings with the Canadian high commissioners representing Barbados, Jamaica, and Trinidad and Tobago to inform them of the project. Press, television, and radio interviews were usually held during these visits, and THEA prepared a press release for all writers to give to their local papers.

Usually THEA met with local home economics associations to discuss the project and enlist assistance for the writers and participation in the pretesting phase. The decision was also made to use the THEA newsletter to communicate progress on the project, work-completion dates for the writers, and news of the Caribbean participants. A new column to present this information was started. Each member of the CAHE executive board, representatives, and writers received the THEA newsletter monthly over the life of the project, and this communication link has continued to the present.

Publishing Process

For the texts at the junior secondary level, the writing specialist had recommended a two-column format together with many illustrations representative of the Caribbean life-styles so that the students would be able to relate to the material. Because the texts were to be developed only to camera-ready stage, it was assumed that the CAHE would be responsible for printing and distribution. As mentioned, however, there was poor communication on this issue, and the CAHE assumed that THEA would make all the arrangements. THEA felt that this would be interference on their part and that it was a responsibility of the CAHE. At the same time, the success of the project depended upon the books being printed when the manuscripts were ready. Consequently, the task of exploring printing possibilities devolved on THEA in the same way as the communications task had.

Three possibilities became apparent. One was to select a local printer from one of the countries—which raised a number of important questions. Which country would be chosen? Would the other countries accept books from a printer not their own? Was the equipment sufficiently modern to produce books of the required quality? Where was the money to be found? Was the CAHE sufficiently well organized to manage the printing as well as the distribution?

A recognized publisher was a second possibility. Such a publisher would be seen as regional and therefore acceptable to all countries. But the CAHE could lose control over the books and what was printed. Would a publisher be interested in doing the books on the CAHE's terms? One publisher in Trinidad was approached but was not interested.

The third possibility was suggested by the Canadian high commissioner in Trinidad. The Caribbean Aid Council, located in Trinidad, could provide funds for a regional project of this nature. It was still necessary, however, to find a company with suitable equipment for the printing job. Furthermore, the CAHE would have to assume responsibility for overseeing the job and for distribution. THEA kept the CAHE executive board informed of all these possibilities and left the choice to the CAHE; but the CAHE executive board found it difficult to come to agreement and no decision had been made by January 1982.

When THEA met with the CFNI in Jamaica in March 1982 to revise the sections on nutrition and food and food service, one of the Jamaican writers indicated that as a result of her press release, Heinemann Educational Books (Caribbean) Limited (HEB)—was interested in publishing the texts. They were interested because the material had been developed in the Caribbean and the CAHE gave it credibility. HEB argued that books would

last longer with a glossy hard cover, but this suggestion was resisted because it would raise the price considerably and did not fit the original CAHE criteria.

After much discussion over the next three months a contract was signed that gave the CAHE copyright as well as royalties and eliminated the need for the CAHE to take responsibility for production and distribution. Revisions had to receive the CAHE's approval. A compromise was reached on a soft glossy cover that would be more appealing to the students but add less to the price per book.

Ian Randle, managing director of Heinemann (Caribbean) Limited, described the problems of printing and distributing the texts in a letter to the THEA project director:

> We faced a different set of constraints when the manuscripts first came to us. Our experience told us that we could not successfully market the series as it existed. There were already two existing well-entrenched courses on the market, and to dislodge those courses the new series would have to at least look better. The major changes which we thought necessary were: (i) complete copy-editing of the material; (ii) re-drawing of most of the illustrations; and (iii) complete re-design of the books to provide for more economic use of space with resultant reduction in length and cost.
>
> To have lower price, superior material, and proper coverage of the syllabus is not enough; buyers have a conception of how a book should look, and unless it conforms to the popular conception of what a book looks like, it will always be outsold by the competition, even if that competition is more expensive. Pricing was always a major concern of the publisher . . . It influences the way the book is designed—that is, its size, extent the number and use of illustrations the use of color, and the number of books to be printed.
>
> Having decided to completely revamp the three books, we then had to seek the assistance of Heinemann (U.K.), partly because we had at the time an on-going co-publishing arrangement in other subjects. We felt that the subject as well as the quality of the material merited the design and production expertise of our U.K. partners. We also needed financial assistance as the investment in a three-book secondary level textbook course is quite substantial. Quite apart from being a non-traditional subject, the new course would mean going against established competition so the financial risks were considerable.
>
> Although the book was actually manufactured in the U.K., much of the editorial and other preparatory work was done in the Caribbean. We produced the book in the U.K. because the manufacturing costs were lower and because it is actually easier to distribute books from the U.K. than, say, from Jamaica to the rest of the Caribbean. In the case of this series, these concerns remained uppermost in our calculations, considering the stated concerns of the CAHE. However, we took the decision that people would be willing to pay a reasonable price for an attractively produced. sound textbook course, written and endorsed by the leading exponents of the subject in the region.

CAHE personnel spent the next two years working with HEB on the revisions. By June 1984, books 1 and 2 of *Caribbean Home Economics in Action* had been produced; by January 1985, so had book 3. HEB introduced the books formally at the April 1985 CAHE biennial conference in Saint Lucia. THEA representatives attended, and everybody celebrated the completion of the books and the successful international partnership.

Distribution

In all fourteen countries, the usual procedure is to have a list of recommended books for each subject. The teachers can then suggest which they prefer the students to buy, usually from a retail bookstore. In some countries, the government provides a book allowance for each student; in others, the school purchases a set of books for the classroom.

HEB adopted the normal practice of distributing complimentary copies to teachers and ministries of education, hoping that the teachers would ask for the books to be put on the list. Because so many countries had been involved in writing the books, it was assumed that this exposure would cause teachers and local home economics associations to ask that the books be placed on the recommended list. The distribution figures for books 1 and 2 are shown in table 14-1.

Book 1 is the least expensive, book 3 the most. Jamaica and Trinidad have HEB divisions which sell to the rest of the Caribbean, but more often these countries buy directly from London at the published price less 25 percent discount. They then price the books according to standard markups. This explains the wide price variation (as reported by the CAHE to THEA)—for example, book 1 sells for as little as EC$15 (approximately Can$7.50) in one country and for as much as EC$25 in another.

Use of Books

After the manuscripts were completed in June 1982, the CAHE indicated to THEA that it would very much like THEA to arrange workshops in the use of the textbooks

Table 14-1. *Sales of Books in Six Countries, 1983–84*

Country	*Year*	*Book 1*	*Book 2*
Barbados	1984	405	15
	1983	10	—
			2,500[a]
Jamaica	1984	200	258
	1983	4,700	—
Grenada	1984		10
	1983		
Saint Lucia	1984	50	
	1983		
Trinidad	1984	841	1,831
	1983	1,150	
Saint Vincent	1984		
	1983	32	
Total[b]		8,674	2,511

—Not available.
a. HEB Jamaica.
b. Includes copies sold elsewhere.
Note: The figures in this table are from Heinemann Educational Books (U.K.) Limited. The number of books sold in 1985 was: book 1, 5,125; book 2, 3,409; and book 3, 3,908. This represents a 40 percent increase over 1984 sales. The publisher expected the books to be put on the junior secondary recommended book list in Trinidad for the 1986–87 year, which would increase sales dramatically because the student population in Trinidad is 40,000.

for the teachers of the various countries. THEA was receptive to the idea, but it felt that the books needed to be more available throughout the region before workshops were held and not until then could the nature of the workshops be decided. Would they, for example, be used to develop a teachers' manual, lesson plans, or visual aids to be used with the books or perhaps all of these? Questionnaire number 3 was sent out in June 1985 to obtain answers to these questions. Some of the information communicated by the responses is revealing.

For questionnaire 2, the response rate was 73 percent; this in itself indicates support and interest. For questionnaire 3 (sent to a similar mailing list) the response rate was 23.5 percent, indicating a lack of interest in workshops at that time.

A breakdown of the responses follows ("n/a" means not applicable):

1. Are the books available to you in your school?

Yes = 80.2 percent
No = 17.0 percent
N/a = 2.8 percent

2. Are books 1, 2, and 3 being used in your school?

Yes = 43.2 percent
(In other instances, books 1 and/or 2 were being used.)

3. How many copies have you (usually of books 1 and/or 2)?

Fewer than 6 = 60.5 percent
More than 6 = 19.8 percent
N/a = 19.7 percent

4. Has each student his or her own copy (usually of books 1 and/or 2)?

Yes = 14.8 percent
No = 85.2 percent

5. How are the books used?

Text = 39.5 percent
For teacher and/or student reference and research = 58.0 percent
N/a = 2.5 percent

Penetration varied from country to country. Many responses indicated that the books were being put on the recommended list in the coming year. Both students and teachers liked the books, usually indicating the suitability of the level, the coordination with the CXC syllabus, and the relevance of the texts to the Caribbean. Sometimes the books were being used in forms 4 and 5, although this was not intended. The purchasers varied from country to country—ministries of education, students, local home economics associations, schools, and teachers.

Conclusions

The union of two professional organizations—CAHE and THEA—to develop texts can be viewed as a success. The twinning of nongovernmental organizations provided strongly motivated, involved professionals and grass-roots support, and an immediate benefit was the production of texts with the help of content specialists. At the same time, there was an enormous amount of volunteer help with a high degree of individual commitment. A question that comes to mind is whether this commitment could be duplicated in other situations. It could be argued that where content specialists at the grass-roots of a subject perceive a need, then the commitment could be duplicated—because these people would be the ultimate users of the product.

One problem was that the content specialists viewed their main task to be merely writing the texts. Little consideration was given to what happened after the texts had been written. It was assumed that acceptance by ministries of education would be forthcoming. It was equally assumed that printing and distribution would follow naturally. Such assumptions were made primarily through ignorance of all the stages necessary for successful production of texts.

One might argue that such a problem was not of

major importance in the English-speaking Caribbean because the ministries of education were already working together closely in the development of the CXC and therefore anything which facilitated the CXC would be well received by them. This is true, but the fact remains that had not a publisher been found, the project might well have foundered and the written material would never have reached the students because the ministries could not have endorsed one set of books to the extent of publishing them—not unless they had been formally involved since the beginning. The most that they could have done would have been to place the completed books on the recommended lists.

Ideally, cooperation during the project between the content specialist and the publisher would have saved valuable time and provided the specialist with needed expertise in the areas of production, format, and graphics. Furthermore, prompter contact with the ministries of education might have helped with teacher workshops and the development of manuals and visual aids, and it would almost certainly have led to immediate placement of the texts on the book list. Obviously such an operation would be easier to repeat in a single country; but as the recent operation has demonstrated, it is still possible among a group of countries in a region if the countries have common interests and are already working together.

Ghana Twinning Project

Some developing countries are cooperating in the development of their own version of the CXC—for example, the West African Examinations Council, which embraces Gambia, Ghana, Nigeria, and Sierra Leone. Indeed, another CHEA affiliate—the Saskatoon Home Economics Association (SHEA)—is twinned with the Ghana Home Science Association (GHSA) and is undertaking a similar process of developing texts. The GHSA had seen copies of the Caribbean books and wanted to develop a set for their own country. Before preparing a plan of action, the SHEA conferred with THEA personnel about the THEA-CAHE experience.

Ghana is adapting the Caribbean model. Two SHEA representatives went to Ghana to meet with their counterparts and discuss the proposal for developing the texts before the proposal was submitted. This eliminated the problem of one twin developing the plan in isolation. The visit also included discussions with publishers and with officials of the Ghana Education Service. Thanks to a previous meeting with the director general of the Ghana Education Service, the Ghana Book Development Council is working closely with the GHSA. Thus, when the pretesting stage is reached, 5,000 copies of each book will be distributed to selected schools. This would not be possible without the support of the Ghana Education Service.

A publisher was selected and a contract was signed with the GHSA. The publisher agreed to provide an editorial consultant to assist writers and a graphics consultant to coordinate the graphics and written materials. The publisher also agreed to assume full financial responsibility for publishing the books and to pay royalties to the GHSA—as with the Caribbean agreement, except that the contract was signed in advance of the books being developed. The format of the Ghana textbooks is similar to that of the Caribbean books, but book 1 is for forms 1–3, book 2 (which may be split into two books) is for forms 4–5, and book 3 is a teacher's manual.

A Ghanaian consultant was selected, with a role very similar to that of the THEA project director. Such a choice was quite feasible in this single-country situation, whereas in the Caribbean the "political neutrality" of the project director had been essential. The much greater distance between Saskatoon and Ghana as opposed to Toronto and the Caribbean also made it a practical choice. The time period for the Ghana project is essentially the same as the Caribbean (two years), but because of the early involvement of the publisher and the Ministry of Education, the books are expected to be in circulation by the end of this period, whereas in the Caribbean, a further two years were required to work with the publisher.

The publisher made it clear at the outset that procurement of paper would be a problem. As a result, the SHEA made arrangements with the Canadian Organization for Development through Education to provide half of the paper requirements. The paper is expected to be used for the final printing of the texts.

The plates will likely be prepared out of the country and the books printed in Ghana. Quality is important for the acceptance of the texts. There is a possibility that they might be used regionally by the West African Examinations Council, which would mean wider distribution and higher sales.

In summary, the THEA-CAHE project evolved a process for developing textbooks that was successful but had some weaknesses. Repeating this process, the SHEA-GHSA project improved upon the original and showed how it could be adapted to a single country. It is a process that other countries might usefully adopt.

Part IV

The Future: Will New Electronic Media Make the Textbook Obsolete?

What of the future? Are new instructional technologies, especially the computer, likely to render textbooks obsolete or reduce them to a minor role in the classroom? Some futurists have been suggesting that this will soon happen, and one hears the argument advanced that developing nations should vault over the textbook stage of educational development and move as quickly as possible to the use of the new technologies. The final two chapters represent a kind of debate about this issue. In chapter 15, L. R. Fernig, J. F. McDougal, and Herbert Ohlman develop the argument for the utility of the new information technologies in the schools. In chapter 16, Edmund Sullivan and Paul Olson counter this with an ethnographic account of how computers are actually used in schools. On the basis of their careful examination of several schools in a rich country, Canada, which has made a significant fiscal commitment to the educational use of computers, they conclude that the computer "is unlikely to rival textbooks in the next fifty years, despite the views of computer enthusiasts." This conclusion should give pause to any who are advocating the extensive introduction of computers in poor jurisdictions.

Perhaps the principal lesson to be drawn is that what Olson and Sullivan and refer to as the "ecology of the school" is a powerful impediment to any rapid, fundamental change in how teachers and children operate in classrooms. If, in the short to medium term, the new technologies are to have any significant impact on how education is conducted, it will most likely be in non-school settings—for example, distance education and postsecondary education. And even in such cases, the computer is likely to complement rather than replace the printed word as an instructional medium.

These final chapters also remind us that in many developing nations the introduction of textbooks that require teaching styles very different from those traditionally in use represents an innovation as fundamental (in Verspoor's terms) as computers in the schools of a rich nation such as Canada. In such circumstances, if one makes all the right policy and technical decisions but neglects the ecology of the school, one will fail to improve learning in the classroom.

Will Textbooks Be Replaced by New Information Technologies?

L. R. Fernig, J. F. McDougal, and Herbert Ohlman

To put the matter baldly, two main problems occur with textbooks: either they are available and teachers rely too much on them—teachers teach the textbook despite training to the contrary—or as often happens in developing countries, textbooks are in too short supply to be of much value. Let us then consider the function of textbooks more fully.

The textbook is a versatile tool for both teacher and learner. Textbooks support teachers in several ways: they contain lesson material in graded sequence; they help to structure and organize the learning experience of the class; they assist the teacher in the daily task of preparing lesson plans; and they provide recapitulatory material and exercises to test progress. For the student, textbooks can be conveniently carried from school to home and provide a summary record of each lesson. These are the qualities of good textbooks, as innumerable official criteria for their selection indicate. Yet despite (or maybe because of) such virtues, undue reliance on the textbook makes for stereotyped, impersonal teaching. In short, bookish teaching can be equated with passive learning.

What is perhaps less obvious is that any textbook is based on a conception (the author's or the editorial body's) of the relationships and processes in teaching and learning—what may be called the hidden agenda. This agenda may lead to varying pedagogical approaches favoring, for example, either an individual or a collective and either a constraining, repetitive or free, autonomous view of education. Although not always obvious, this agenda will almost certainly exert a powerful influence in classroom encounters.

Another function of the textbook is to provide reference information. Encyclopedic textbooks were common until recently in some European countries; all the subject matter to be taught in an elementary grade was placed in a single volume, which served as a reference. Modern publishing everywhere has become more sophisticated and specialized (the canon now is one textbook per subject per grade), but the increasing size of the books, along with serial presentation (text, workbook, teacher's edition, supplementary readers, and so forth) shows that the character of reference work has not altogether disappeared. At the same time, the selective filtering of information by the author remains part of the hidden agenda. It has, however, been claimed that the surge of paperback publishing in industrial countries has reduced the reference value of textbooks in some subjects because it is often cheaper to make use of a group of original texts than a textbook author's anthology.

Yet another function of the textbook is to help students make links between what they learn in school and their apprehension of the outside world. But the printed word, even when illustrated by color graphics, must remain at some distance from direct sensory impressions of sound, movement, and three dimensions; it is here that the role of the teacher becomes essential. The place of textbooks in the classroom needs careful analysis from the viewpoints of both teacher and student—with an eye to the type of learning that the educational system wishes to promote. But to the extent that the textbook is the stand-alone medium, effects on learning are likely to be negative.

In the traditional textbook, sections and chapters are arranged sequentially by subject to correspond with curriculum units or defined yearly grade objectives. The full break with this tradition came in the late 1950s and early 1960s with widespread interest in (and at times enthusiasm for) programmed instruction. This new method of presenting subject material was developed from behaviorist theories of learning. Learning material

was presented sequentially in small steps to which the learner was required to react (stimulus-response) before proceeding to the next step. As it developed, the methodology incorporated techniques for self-correction (for example, "from step 36 return to step 20 and re-learn"), contained items for reinforcing what had been learned, and supplied feedback and rewards for progress (for example, "congratulations, you may now proceed to step 55"). The linear step-by-step procedure of Skinner was modified by Crowder into a branching presentation, and by others into skipping modes. Some early enthusiasts developed these texts into teaching machines that enabled the student to progress by turning a handle or pressing a key. It was soon found, however, that the same results could be obtained through books, and a number of textbooks were published wholly or partly in programmed form.

By the early 1970s, enthusiasm for programmed instruction had largely dissipated as it was found to be too rigid and limiting, whereas the educational experience should embrace activity, discussion, and concept building. But one issue raised by this methodology remains of interest today because of the relevance to the new information technology. Programmed instruction permitted teaching materials to shift the emphasis from teacher-centered instruction to student-centered learning and raised several questions that remain unanswered. How far can the teacher be replaced or supplemented for parts of learning (for example, drills and exercises)? For which students (for example, low achievers)? What then is the new role of the teacher? How far should students be allowed to proceed at their own pace? What are the effects on class organization and, eventually, on the curriculum itself?

Where textbooks are lacking, their absence is considered detrimental to both learning and teaching. To provide books is no small undertaking—it includes the preparation of texts (curriculum development, language research), publication (whole publishing and printing industries may have to be created), and distribution to schools and students. Further difficulties are securing paper supplies and financing the entire textbook program.

Statistics about textbook production are difficult to gather and compare because of differing methods of accounting. As a rough indication, in thirty-eight countries in Africa in 1982, the proportion of educational budgets devoted to educational materials averaged 6 percent but with a considerable spread between countries from 0.2 to 26 percent depending on what was included. Presumably textbooks accounted for only part of this expenditure, although in some instances it has been claimed that textbooks alone absorbed 85 percent of the materials budget.

The application of modern technology to printing has brought about savings and improvements in textbook production. Electronic composition and photographic offset printing have reduced initial costs while maintaining quality. But there is a limited economy of scale when it comes to paper, which now accounts for an increasing part of the cost of a book. Thus, as developing countries demand more textbooks, the amount of paper used per student appears to be rising everywhere (a recent estimate gives 2 kilograms per student-year in some industrial countries, 5 kilograms in an experimental project in West Africa), and the cost of producing paper itself rising. At best, a shift to different print formats for the textbook (considered in a broad sense as a printed tool for learning) might entail economies in the quality of paper, ink, and binding. It is time, perhaps, to consider alternatives.

Mass Communication Techniques

The mass media—film, radio, television—have been with us long enough to exert an influence comparable to that of the traditional educative roles of such institutions as family, church, and school. The informal education provided by the media is extremely pervasive. Initially, the media were used in formal education as teaching aids and for special programs—and are still used to fill slots in the regular teaching schedule. A more systematic approach was adopted by curriculum innovators of the 1950s and 1960s, whose patterns for teaching the sciences brought together printed material with matching audiovisuals such as films, slides, loops, tapes, and so on. The learning package, as distinct from the single textbook, was on its way. This use of the media has improved the quality of teaching and increased access to education by distance learning. Experimental projects relating to both have been reported extensively, and the conclusions relevant to the present topic are summarized in the following sections.

Improving Teaching

Systematic radio programs have proved effective (for example, in Nicaragua and Thailand) in improving teaching when focused on such subjects as elementary mathematics or English in which teachers are insufficiently trained. A number of developing countries continue to use radio to provide or reinforce the in-service training of teachers. A benefit of this medium is the low cost per student. This is an intrinsic merit of the mass media in general—once the program has been prepared, it can be broadcast again and again at little cost to a large public. There is no evidence, however,

that radio programs have reduced the need for printed materials; indeed, those programs which supplement the teacher's skills usually require some form of textbook as a base.

Educational television was used extensively by the government at the primary level in the Côte d'Ivoire for more than a decade, again in an effort to improve the quality of teaching and to compensate for insufficient instructional materials. Although this bold experiment did succeed in working out a methodology for conveying the curriculum through television, it was abandoned in 1982-83. Results were good for oral expression and reasoning capacity but poor for written expression and numerical calculation. With the dropping of television, the major problem facing the Ministry of Education has been to revise the curriculum, produce textbooks, and retrain teachers to use them.

Distance Learning

The mass media have proved most successful in increasing access to education. Distance learning provides an equivalent formal education for students remote from the teacher for much, most, or even all the learning process. These courses aim to be self-instructive, but a variety of channels links students to a teacher—the original one, still popular and a basis for the rest, being correspondence.

Intelligent use of the mass media can speed up distance learning, assist interaction between student and teacher, and create the essence of an institution. One striking example of a program to reach a scattered population is provided by the Australian outback system, which makes considerable use of two-way radio communication for primary school children and also involves parents in the role of tutors. More numerous examples are offered for higher education, whether the aim is to serve a population over a wide area—as in Australia, Alaska, and the University of the South Pacific program—or to provide second-chance opportunities to a large population—for example, the British Open University.

The British Open University, with more than 100,000 students, has explored most of the resources available for distance learning. A combination of correspondence courses, radio and television broadcasts, recorded tapes, local guidance, and short residential courses link students and teachers. The special needs of distance learning led the Open University to set up teams for preparing courses and materials, and the work of these teams—made up of subject specialists, editors, artists, media specialists—does not end when the initial materials are completed because the process of revision is continuous. The University of the South Pacific (USP) has an international program that makes use of a satellite communication system. Here too the emphasis has been on developing packages of learning materials rather than traditional textbooks. Books present information and focus on teaching while learning packages, designed for independent study, focus on student interaction with the material. Experience with satellite broadcasting in the USP program has shown that it is better to send lecture material in print or on audiotape and then use satellite time for interactive processes—summaries, questions and answers, clarification, and discussion.

In distance learning projects, audiocassettes and videocassettes have become a popular way of providing permanent records of broadcast material. Audiocassettes have the particular advantage of widespread and generally standardized playback equipment; for science teaching, videocassettes can be used in the presentation of experiments.

Nonformal Education

Where the objective of nonformal education is community development, the mass media are valuable for communication. Radio programs, which are economical, have been used in many developing countries to present a wide range of subjects—agriculture, health, nutrition, child care, and self-help activities. In more structured forms (as with listening groups and two-way communication), the spoken word has proved effective in linking information to local needs and interests, providing education without requiring learner literacy or printed materials.

Conclusion

The application of the mass media to education demands carefully prepared, indigenous programming. Broadcasts transferred from one national context to another seldom work. It is difficult to organize a full multimedia distance education system (for example, like the British Open University) without a high level of related technology in the society. Hence, for most developing countries, the mass media are used in a partial way. What is more, the media do not replace textbooks; the design, content, and presentation of texts change, however, when they become the printed part of a learning package.

Electronic Media

Many are aware of the widespread use of the computer in schools in North America, of the aim of the United Kingdom to equip all primary and secondary schools

with computers, and of the French objective to place 100,000 computers in schools by 1988. In contrast to textbooks and programmed instruction, which developed within the educational establishment, the pressure for the use of computers and other new technologies has come from outside the school system. Moreover, the computer is not just another teachers' aid; its use raises fundamental questions about the nature of learning, the acquisition of skills, and the way education is organized.

A new information technology (NIT) is developing at the point where three technological streams—microelectronics, computers, and telecommunications—converge with a variety of products and processes for handling information. It is no exaggeration to speak of an information revolution, making it possible to record and store vast amounts of information, distribute it over any distance, interrogate it from remote points, and transform it to meet many different needs. In an all-embracing way, the NIT integrates older technologies (telephone, radio, and television) with newer devices for storage and transformation (chip, disk) and display systems (visual display units, synthesized speech). The integration of these devices gives the NIT its power.

In daily life, the NIT affects all aspects of production, distribution, services, work, and play, laying the basis for what is termed in the industrial Western countries the postindustrial society. Inevitably, the NIT is becoming an even more powerful educative force—capable of influencing people and changing behavior—than the mass media of a previous generation. The challenge that this represents to educators and to the traditional textbook industry has been forcibly expressed by Clive Bradley, chief executive of the British Publishers Association:

> What is more, the technology is getting cheaper and cleverer—more intelligent—every day. It is not such a big step for the whole process of change to be dramatically speeded up by the machines being programmed with the ability to write their own program—instructions and materials—so overcoming the biggest barrier of all, the human ability and time needed to transfer the world's learning from the mind and the printed form we all know to the tape, disk, chip. This transformation could change the transfer of knowledge and ideas from the relatively passive medium of the book (supplemented by teachers, etc.) to an interactive process with the computer.

Automated information processing is here, and the future, though difficult to predict, will surely not see a reversal of the trend. The questions are: How can the NIT be applied to education? What will its effect be on textbooks? In seeking answers, we shall consider separately some examples of the NIT—microcomputers and computer-assisted learning, electronic publishing, and laser-optical media.

Microcomputers

The small, portable computer based on microelectronics has been one of the most remarkable achievements of recent years. With ever-expanding sales, the price of microcomputers has plummeted to the level of consumer appliances. The educational impact of the computer has followed, if more slowly, the microcomputer mass market. An early goal was computer literacy. For example, the British Broadcasting Corporation (BBC) televised a series which explained to a wide public the nature and use of computers in society, the processes that make up computing, computer languages and programming, applications of computers in offices and industry, and the concept of artificial intelligence. Other media such as specialized periodicals, trade journals, and the daily newspapers created an awareness of the NIT in general. In schools, the vocational aspect of computers—training in technology and in programming, usually grafted onto mathematics and technical courses in secondary schools—has become a recognized line of study.

As an aid to teaching, work with mainframe computers in the 1960s usually relied on programmed instruction techniques for drills, exercises, some subject matter, and testing. It was soon found, however, that this methodology made little use of the unique potential of the computer. A more advanced approach to computer-assisted learning (CAL), based on specially prepared programs in which students work individually or in small groups at the terminal, has come a long way since the 1970s, and today it constitutes a significant school use of the computer. From the simple routine of the student posing a question, receiving a response (in the form of information on the screen), and then posing another question, much more sophisticated programs for learning have evolved. These include the display of course materials on the screen, with the computer posing questions and, depending on the response, directing the student to other parts of the program; the addition of visual displays and animation, sound, and music to text; and the presentation of material in the form of educational games and simulations in which, for example, students can see and manipulate the structure of a molecule, acquire skills in operating tools and machines, or even drive a car or a plane. Perhaps it is in the element of play, where the distinction between playing and learning disappears, that student interaction with a computer gives CAL programs their remarkable educational power. The development of problem-solving techniques, often by the ingenious use of

images and special computer languages (such as Papert's LOGO), has permitted students to program the computer rather than the reverse. Consequently, the computer is opening up a vista of active exploratory learning that is radically different from conventional educational practice.

The literature records a wide range of experience with CAL at different school levels. In primary grades, computer literacy and the ability to use the keyboard have served as a basis for more extensive work in subjects in the curriculum. Arithmetic and language courseware have received most attention, usually in drill-and-practice programs for remedial work and slow learners, but problem-solving programs appear to be on the increase. Also, in other subjects such as social studies and general science, a number of CAL possibilities are being explored. For example, by adding simple sensors (for sound, heat, and light) as microcomputer input devices, a range of physics experiments can be performed in the classroom. In secondary schools, the subject orientation of the curriculum has given rise to a great deal of CAL programming—in mathematics, the sciences, languages, and the other humanities, including art and music. Simulations and modeling are used to introduce concepts in the social sciences and biology and to some extent to teach interdisciplinary topics such as issues in economic development and ecology. With the arrival of microcomputers in the schools, the need to train teachers to use them has been met first by in-service arrangements at the local or national level and later by appropriate courses during initial teacher training.

Computer-assisted learning applications are a key factor of educational development in the industrial countries. Practice, however, has varied from country to country. After a research project, Sweden decided to concentrate on upper secondary and vocational education. Switzerland followed suit, whereas Japan focused on higher education. The United States, with the longest experience in the field and a decentralized system, has advanced in all aspects of CAL—experiments, programs, schemes for pooling resources and evaluating programs, and the design of computer languages for educational use (for example, PILOT, LOGO). Now the U.S.S.R. has announced a program for the introduction of computers into its compulsory educational system.

The most systematic efforts to develop national policies for CAL have occurred in France and the United Kingdom. The French educational authorities launched an experimental project in the mid-1970s that included fifty-eight *lycées* and two types of in-service training for teachers, one intensive and the other introductory. Unfortunately, before it was possible to evaluate this project, the "10,000 computers" program was launched, followed by the current "100,000 computers" program, which aims to equip all French schools with computers by 1988. In addition, innumerable spontaneous computer clubs for youth and adults have sprung up, and the government has encouraged the provision of microcomputers in every community for less formal educational use. The objectives of the French school program are to make informatics a part of general education, to innovate with the NIT at all levels of education, and (especially) to renew vocational and professional education by linking them to the world of work. The program is being evaluated by the Institut National de Recherche Pédagogique, which also makes available software produced both by teachers and by commercial publishers.

In the United Kingdom, with a more decentralized system, there have been four national initiatives. The Scottish Educational Department's program and the Ministry of Education's microelectronics program (1981–84) for England and Wales provided information, advice, and training in curriculum development, software production, and software selection. In parallel, the Ministry of Industry has been providing equipment to primary and secondary schools. Then the BBC launched a Computers in Schools program for which a special microcomputer has been developed, along with guidebooks, software, and regular broadcasts. These programs in schools are complemented by courses offered by the Open University. Although all of these are ambitious national programs, current provisions will allow every child in France only fifteen minutes a week with a computer and those in the United Kingdom slightly more; although computer awareness might be achieved, many observers hold that at least fifteen minutes a day—or about five times as much hands-on experience—are necessary for computer-assisted learning to be effective.

A major problem in these countries has been lack of good CAL courseware. Hundreds of programs exist, and the supply seems to grow exponentially; but many are of dubious quality, and a bad program can set back the learning process. Hence considerable attention is being given to the evaluation of available material in order to guide principals and teachers in their choices. Ideally, a program should be produced by a team comprising an experienced teacher, a cognitive psychologist, a computer programmer, and a graphic artist—but such an ideal is expensive. A French estimate is between $6,000 and $25,000 for one hour of CAL, and a U.S. estimate puts the price of a semester course at $100,000 (including production costs). Specially designed software for programming and new writing techniques will reduce such cost, as will the eventual appearance of machines responding to speech. But the preparation of good courseware will continue to demand effort and ingenuity.

Meanwhile, broader questions need to be asked about the impact of the technology on the school system. Is this new phenomenon just another fad like programmed instruction, destined to join it in the dustbins of educational history? This seems unlikely, given the speed with which computers are entering all aspects of daily life and work—plus the political pressure to computerize in countries not wishing to be left behind. What appear to be the advantages, as yet not fully realized, of the school use of computers? Computers:

- Interact immediately with the student and serve to instruct, guide, and test in response to the student's demands
- Relieve the teacher of the drudgery of drills and repeated exercises and help slow learners to catch up, thus allowing a more rational use of the teacher's time
- Expand the resources available to the teacher and help in project and research work
- Stimulate children to explore, become problem solvers, and work on their own; also are useful for group or class activities in which children often appreciate the discipline and patience of the computer
- Provide vocational and professional education
- Improve the efficiency of school systems by reducing failure rates and speeding up learning
- Improve and extend distance education by linking with modes of telecommunication.

A different set of considerations arises for the prospects of CAL in developing countries. The cost of equipment, training of specialists, and maintenance in extreme climatic conditions are obviously basic problems for introducing computers into many developing countries. Some industrializing nations such as Brazil and India already have ambitious programs to introduce computers, but for most the paramount barrier is cost. When applying computers to education, the lack of software and CAL programs and the cultural bias of imported material are serious obstacles. It also takes time to train the programmers, teachers, and administrators to use CAL. A number of initiatives are now under way, however, to exchange program specifications, research results, and prototype programs for CAL, and each receiving country can add relevant material from its own culture.

Electronic Publishing

Electronic publishing has come to mean many things to many people. One meaning is a complete replacement for traditional print media (which requires the printing of information on paper, packaging, and physical distribution) by a system for storing information on magnetic or optical media (which can be distributed either by these media or more and more via modes of telecommunication).

The storage capacity made available by the NIT has led to the creation of numerous large data bases. The one most familiar to educators is ERIC in the United States, which now contains references to more than a half million educational research reports and periodical articles. Users can consult this vast store of information either by scanning a printed version or more rapidly by reading it from a computer video display terminal. After locating the studies in which they are interested, users may examine the original texts by borrowing from a library or ordering microfiche reproductions, which store ninety-six pages of text in photographically reduced form on a single 4-by-6-inch card. The industrial, commercial, and scientific uses of data bases are legion and growing rapidly. Publishers have not been slow to adopt the technology, particularly those that issue reference works. At the same time, a new profession—information vending—has come into being to provide access to a range of data bases.

A related development is electronic mail, which is used to exchange personal messages and, sometimes, to hold an electronic conference (teleconferencing). Although many publishers have been using the NIT in their day-to-day operations (for example, composing type by word processor), few have gone beyond this to take the position that their business is not books or newspapers but information. The NIT offers customers the possibility of obtaining the information they need in a variety of forms, both printed and on a screen.

The print option can itself take on new forms: customized publishing is an attractive alternative which overcomes the problem of providing too much information (in a mass-produced publication) by matching customer requests with suitable data bases. Then only those items which correspond to the customers' interests are printed out.

Of even greater potential is the ability of the NIT systems to provide rapid feedback: users can consult electronic data bases in minutes instead of waiting for days to receive their answers by mail. One example of this approach is provided by videotex, with public systems being developed in most European countries to link, through the telephone system, the user's television screen to the computerized data bases of the information providers.

The large U.S. publishing firm McGraw-Hill, well known in the textbook field, has made a corporate commitment to the NIT. The organization of McGraw-Hill has been changed from one of traditional divisions by publication to one of market focus groups that concentrate their activities on specific industries. Writers and

editors store their material directly in computer data bases—information turbines—which can on demand turn out new information products ranging from individualized newsletters to a host of services. Another feature of the new approach extends information input beyond text and pictures to comprise a multimedia turbine, so that a new aerospace magazine, for example, is able to offer part of its content on videocassettes.

So far, educational applications of electronic publishing, videotex, and similar systems have been limited because almost all data bases have been created for commercial, technical, or scientific needs. Probably the same situation occurred in the past when the adult versions of reference works such as encyclopedias and dictionaries were followed by simplified ones for schools. Information, it is true, is not knowledge, and still less is it education; yet it does form the foundation. A good deal of education consists of providing the learner with information and depends on what is available—from the teacher, the textbook, or the library. Implications of this aspect of the NIT for schools include the need for students to know about, use, and feel at ease with the technology; and the possibility for teachers to expand the range of information they themselves command and thus help their students analyze and evaluate information resources. A necessary step for information professionals, publishers, and librarians will be heightening their awareness of the value of developing data bases specifically for school use.

Laser-Optical Media

Another alternative to paper and ink are new, all-digital storage media which employ lasers for writing and reading. First, there are videodiscs 30.5 centimeters in diameter which can give random access to up to 50,000 images, up to forty minutes of color motion pictures, with stereophonic sound, or any combination of these. With the addition of a small microcomputer, access to this material can be interactive, providing an ideal medium for CAL. Videodiscs can be stamped out like phonograph records from masters at a small cost of less than $2 for materials.

More recently, the compact disc has appeared—only 12 centimeters in diameter but storing up to an hour of very high-fidelity music. Since 1985, this technology has been made available as the CD-ROM (compact disc-read-only memory) for the storage of up to 500 million characters of information—equivalent to more than 100 printed books. It appears that CD-ROMs will be able to store data, text, audio, and video on a single disc, thus replacing a host of incompatible audiovisual equipment at a stroke. There is also another laser-optical medium designed for unit records—the laser card—which has an information capacity of only a few million characters but which allows frequent updating. This could be an ideal medium for student records.

For the first time since Gutenberg, we have a breakthrough in print—one which is extremely compact, rugged, light, and machine-readable. Many information providers have already put selected data bases in this form; for example, part of the catalog of the Library of Congress is available on CD-ROM as Bibliofile.

Impact of the NIT on Education

School systems, with their traditions, vested interests, and settled structures, are resistant to change. Technological aids have had little influence on educational practice, because they do not fit into the way most teachers like or expect to organize their classrooms and their teaching. Furthermore, few teacher-training institutions make full use of the NIT, and their example is bound to influence the practice of their graduates. But the concepts of integration and of networking, which are intrinsic to the NIT and which are apparent in applications in industry, business, and administration, may gradually convince effective educational users to adopt a multimedia approach.

Using a multimedia approach, the NIT in schools will combine the microcomputer, access to television and radio broadcasts, and a range of media for storing information and for processing results of students' work. The NIT expands possibilities for individualized instruction and learning, allows each child to proceed at his or her own pace, and copes with differences in ability and motivation. At the same time, the technology supports group work, particularly small groups devoted to exploratory and project activities. Moreover, learning can take place through a full range of sensory-motor impressions: not from just text alone but from interaction with the computer, still and moving pictures, sound and music. To a large extent, all schooling is mediated learning—an alternative to direct experience—but the NIT offers two fresh advantages: range and exploration. It comes closer to representing the real world than anything previously available before in education, and it permits the student to explore that world.

The extent to which the NIT will become a regular part of school-based education depends on three factors. The first is the cost of providing the needed equipment to schools. Many pessimistic forecasts have been made about this, but the record of such projections is poor. The pocket calculator was once an expensive piece of equipment but has become almost as common as the pencil. The second factor is the cost and difficulty of developing good courseware, an obstacle which cannot be solved by technical means alone. But with the increase in the number of people qualified to take part in

development work—teachers, curriculum specialists, media specialists, and programmers—both quantitative and qualitative improvements can be expected. The degree to which education authorities will take the lead in evaluating courseware and ensuring its distribution will be critical.

The third factor is more subtle: how far and how fast will learning theory advance as a result of the use of the new media? This factor raises basic questions about the mental development of children, individual differences in rate and style of learning, and the effect of group activities and socialization. The traditional system uses administrative devices such as grouping, streaming, team teaching, and various methodologies. But interactive media such as CAL are student-centered, not teacher-centered, and require a reconsideration of the educational theory that determines the way schools work—curriculum development, successive grade levels, the practice of grading and of assessment, school organization, and the role of the teacher. At present, new media are being applied in old situations, and so their potential cannot be realized. The need is clear for more research directed to courseware development and evaluation in particular and to educational theory and practice in general. As in many other spheres of life, the technical facilities are advancing more rapidly than our knowledge of how best to use them.

Strategies for the Future

Will textbooks be replaced by the new technologies? As yet, there is no straightforward answer to this question, even in the most advanced situations. For the immediate future, the textbook is likely to retain its primacy among instructional materials. But trends are visible from both technological and educational perspectives, which publishers of textbooks need to consider carefully. In the specific context of developing countries, questions arise—from national educational policies with respect to the NIT, through publishing of school materials, to international cooperation.

Cooperation between Publishers and Educators

Initially, the challenge posed by the NIT is addressed to the education authorities of each country. Whatever their financial resources, no country should be excluded from what is fast becoming an essential feature of modern life. Even where a typical school classroom may lack electricity, and a single, perhaps untrained, teacher faces forty or more students with an inadequate supply of any educational materials, commercial firms and public utilities may already be using the new technologies. The position taken by educational authorities will vary: adopt a wait-and-see policy; make arrangements for the training of qualified people abroad or at home in technical and programming skills; or start an experimental program around a national research and curriculum development agency—along the lines of the French step-by-step approach.

Strictly speaking, textbook publishers do not have a prime responsibility for deciding such policy issues. Whether in the public or the private sector, however, they are the main producers of learning materials and are probably best qualified to judge the impact of the new technologies on production methods. Instead of passively accepting what comes down the line in the shape of manuscripts drafted by curriculum teams, they would be well advised to engage in a dialog with administrators and professional educators. In particular, they should be able to offer alternative approaches for the goals that are required of them.

Redefining Publishing Goals

There is evidence from the United States, Europe, and Japan that publishing is being affected in two ways by the new information technologies. The first way is the application of new media that challenge print, notably mass storage devices and telefacsimile transmission of masters—as is done by many newspapers published simultaneously in several places. These open up the possibility of cooperative arrangements between publishers for jointly preparing prototypes, which can then be distributed electronically and to which each partner adds his own locally oriented material before printing. The second way relates specifically to educational publishing. The publication of courseware, in the form of disks with printed support material, is already an important part of the textbook market in some countries. Likewise, multimedia kits—comprised of text and illustrations, audiocassettes, and other materials used widely in distance learning—have had an impact on school-based teaching. The textbook publisher should conceive of its products in a multimedia context rather than as limited to hardbound printed books. Hybrid technologies provide more versatile and less costly learning materials, but curriculum developers and education authorities need to think in terms of learning packages.

Redefining Textbooks

The notion of the textbook as a single, stand-alone tool for teaching and learning seems to be outmoded. But to draw attention to the importance of learning packages, of which the textbook is one component, does not necessarily mean the immediate importation of high technology. In addition to the textbook and electronic

media, there are other instructional and learning aids, most of which must be imported by developing countries. Apart from writing materials, these include preschool and early primary aids for learning numbers, measurement, and word recognition as well as equipment for teaching science. Several countries have succeeded in replacing imported models by locally developed ones, and here a general movement toward increased local production is essential—whether nationally, in cooperation with neighboring countries, or in partnership with the industrial world. In any case, the textbook is one of the many media available for teaching and learning.

The Role of the Teacher

Experience with educational technology, old and new, proves that advances occur only insofar as they are accepted, understood, and used by teachers. It is absolutely essential to associate teachers with innovation. Therefore the target for promoting the adoption of the NIT in textbook publishing should be the teachers' college and the system of in-service teacher training. Both the British and French strategies are based on initially persuading teachers.

International Cooperation

Cost, programming, and research aspects of incorporating the NIT into the process of education have been described above. In each area, international cooperation would likely assist developing countries to modernize their systems. Aside from such a general observation, there is a place for closer cooperation in the application of the NIT to education—for the benefit of all countries. Fuller exchange of information should include results of research, evaluations of existing software and courseware, and specifications for their development. Beyond this, there is a need for training programs and for the development of prototype CAL material in relatively culture-free subjects such as mathematics, science, and technology. This form of technology is an area in which education authorities—with textbook publishers—must assume leadership. If they do not, the ground will be preempted by commercial interests less concerned with improving the quality of education.

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Computers in the Classroom

Paul Olson and Edmund Sullivan

The past few years in education have seen a flurry of computermania. In 1983 the first issue of *Time* magazine, normally devoted to the Man of the Year, featured instead a computer as the Machine of the Year. This view that the computer is the wave of the future is shared widely in the popular culture. Yankelovich's study of U.S. public opinion showed that 80 percent of Americans expect that in the very near future, the computer will be as commonplace in the household as the television. Sixty-eight percent of the same sample believe that the computer will ultimately raise production and improve the quality of their children's education (Sullivan 1983).

In Canada, there are also great expectations for the computer. By September 1984, there was on average one computer for every 200 Canadian children (Sharon and Mehler 1985). Although this relatively small ratio currently creates a politics of scarcity, ministries of education in a number of provinces have two- to five-year plans designed to increase dramatically both the hardware and software support available to their schools. In Ontario, for example, the ministry has agreed to fund 70 percent of the cost of the Ontario-built Icon System or those of similar specifications purchased by school boards. Educators trust in the capacity of computers to assist in mathematics instruction, to help teach writing skills, and generally to enhance the learning environment.

This general interest in educational computing mirrors a wider enthusiasm in Canadian society for using computers in many applications. In a recent report by the Canadian Department of Labour (1982), the computer is pictured as a "triggering technology," one that will improve economic growth. According to this report, the federal government supports the further development of microelectronics and is concerned almost entirely with technological questions such as the development of adequate hardware and software. Questions of implementation, delivery of fullest social benefits, and the new millennium are seen as secondary issues (Sullivan 1983).

There is, however, an underside to educational computing. Technological innovation in the twentieth century has become a means of control, with different results for different classes, racial groups, and gender divisions (Braverman 1974; Edwards 1979; Noble 1985). There is also good historical evidence that schooling serves the needs of particular dominant groups within the work force (Connell and others 1982; Connell 1985). The computer may possibly accentuate power inequalities within a society. The whole issue of computer literacy is an open one at this point, but there is every reason to suspect that a division between computer literates and nonliterates in the labor force will create power differentials within society itself, enhancing the skills of some workers (thereby giving them more power) and reducing the skills of others (thereby lessening their power).

Critical discourse on computers notwithstanding, the present societal temper tilts toward the millenarian utopia which, short-lived as it invariably turns out to be, almost always accompanies the development of new technologies. Among other things, the new technology of the computers is seen as having a profound impact on the traditional textbook. Evans, in a book called *The Micro Millennium*, entitles one of his chapters "The Death of the Printed Word." It is his claim that, in the 1980s, the new electronic technologies will have their greatest impact (1979: 118–20):

> The book as we know it is simply passive, merely transferring information from one mind, that of the author, to another mind, that of the reader. But the book of the 1980s will no longer be passive, for it

will be a sifter and interpreter as well as a purveyor of information. Dictionaries, for example, will offer packages of relevant information on command. But significantly, perhaps, this is the kind of problem area which appeals most to the computer scientists who are currently engaged in the field of machine and artificial intelligence. It is also the area into which increased effort is likely to be pumped in the near future, for once real progress has been made, the gains are likely to be immense. In teaching and education, the dynamic book could have a breathtaking powerful role, and there is an obvious spinoff to industry and commerce. Once again, in a capitalist world, the focuses of the market place prevail, and the promise of this commercial spinoff will be enough to ensure that the intricate programs allowing this kind of data inspection and retrieval will ultimately be developed.

The technical ability of computers has revolutionized information processing. By their facile execution of previously sledgehammerlike or unachievable human tasks such as brute arithmetic, machinations of formal logic, endlessly recursive tasks, rapid and staggering storage and recall of memory, and symbolic organization and manipulating, computers have revolutionized our modes of physical and mental organization. The array of practical applications is astounding. Computer use is increasing in schools and businesses in virtually all industrial societies (Sharon and Mehler 1985). In 1980–81 in the United States, for instance, there was a 56 percent increase in school-based computing, with more than 15,000 schools of the 24,642 surveyed reporting computer usage (Market Data Retrieval 1983). Many believe that the use of computers in schools will eventually be universal. Similar trends are to be found in business applications and personal computing. This growth in electro-mechanical innovation has profoundly transformed our material and technical ways of organization and our potential for production and efficiency. Not surprisingly, given this efficiency, the manner in which work tasks are expected to be produced and of social organization supporting such production have also begun to change (raising elementary questions of how a word processor is different from a typewriter, or how a computer text is different from a textbook).

It is not fair, however, simply to criticize the millenarian stance toward computers. Such a utopian attitude is part of the creative thrust of new and inventive cultural instruments. We are at a watershed between older industrial technologies and the development of a complex new technology, which is leading to a new information society that will replace our present industrial order. These rapid innovations are axial forces bringing about a societal transformation. The process has four stages (Masuda 1981: vii):

- Many different kinds of innovational technology come together to constitute one complex, integrated system of technology.
- This system spreads and gradually becomes established throughout society.
- The result is a rapid expansion of productivity.
- The impact of this new type of productivity is sufficient to transform traditions into new societal forms.

Profound societal changes are slowly emerging around these new information technologies. We are, however, quite dubious of the claims that Evans (1979) makes about the demise of textbooks. Let us remember that literacy did not replace orality, and both these skills have had a long dialectical evolution (Havelock 1973; Olson 1977). Because text and literacy have been amplified in the industrial era, print literacy will be an intricate legacy of the industrial world to the information society. Of course others besides Evans have prophesied that the new technologies will make vulnerable, in varying degrees, the present forms of print-text media. For example, Godfrey and others (1982: 112) give one scenario about encyclopedias: "A book publisher who puts his encyclopedia on a video disc will remain a book publisher for quite some time as far as statisticians are concerned . . . Nonetheless, there are clear differences of vulnerability." Godfrey and others concede that compared with other communication media, textbooks seem to be the least vulnerable to the advance of the computer. Over the next decade, they give paperbacks a vulnerability coefficient of 0.15, hardbacks 0.45, directories 0.90, and television advertising 0.94. Nevertheless, futurists like Godfrey and others (1982: 120) conclude:

> Book publishers seem most beleaguered by the new technologies, especially by computers. Conservative by nature, many of them still look back nostalgically to the passing of hot lead, hand binding, and intelligent bookstore owners. Now computers seem to be surrounding them. The results are likely to be a further extension of the split between the extreme of lines. Potential best sellers will earn secondary revenue from mass paperbacks sales. The really specialized books such as academic books make no profit in any case and will disappear from print. Publishers with strong book back lists and good contacts will soon adapt to the new technology once they accept the fact that the computer has fully closed the net and they needn't print such books ever again.

This type of futuristic millenarianism is certainly thought-provoking and challenging to any traditional point of view (Sullivan 1985), and it is important to envisage the potential effects on the form and content of learning. A brief anecdote signals the directions of further analysis. Ivan Illich, the renowned critic of education, had just finished his book *Deschooling Society* (Illich 1972), when he gave an address in the early 1970s. He appeared to plan his lecture in the five minutes before he spoke, jotting down some notes on an index card at which he glanced during the speech. He began by telling the audience that he didn't know why he should be talking about schools because they would be out of existence within the next ten years. His delivery was delightful and in many places insightful. But history has proven him to be a very poor prophet. With that said, we would now like to reflect on the questions which surround textbooks and how they will be affected by the computer. We contend that the computer is not profoundly affecting the conventional school system. This does not discount the possibility that it will do so in the long term. It will do so, however, only if there are dramatic changes in contemporary education.

Computer Technology in Two Canadian Schools

At this point, we will convey a sense of how the computer is used in two very different Canadian elementary schools. These schools are among six in which our research team has done extensive ethnographic descriptions.[1] They were chosen to present a variety of settings for critical comparison: we observed an elite-humanistic school, two working-class ethnic schools, a middle-class school (where computers were being used for special education), a model school (where a special program was in its first year), and a rural school. We will describe in some detail the model and rural schools to give a broad view of computer usage.

The Model School

Selkirk Elementary School, the model school, is located on the fringes of Metropolitan Toronto in a suburban neighborhood of large, sprawling, expensive ranch houses. The majority of the children are from well-to-do families and with rare exceptions are stylishly dressed and very fashion-conscious. When we first met the principal, he indicated to us that these children came from families whose parents worked as dentists, accountants, lawyers, and business executives. He characterized these parents as "demanding, interested, intelligent, worried, and assertive." The school community is about 60 percent Jewish, but it also has a small Japanese enrollment. One Indian girl and one black boy attend the school as well.

Selkirk is a two-story building, small, plain, and artless on the outside, on a residential street distant from commerce. The interior is not much different, with the exception of children's drawings on the walls. Its 150 students range from kindergarten through grade 6. There are double grades (such as grades 3 and 4 in one room) and a small accelerated class. The computer laboratory is the new feature in the school's program. This year, Selkirk was designated a model school for computers in the Toronto school system.

For lab work, each class at Selkirk is divided: half the class stays in homeroom, whereas the other half goes to the computer lab. Our observations (on March 25 and May 2, 1984) were made in a fifth-grade class. The observations covered both computer use in the homeroom class and the lab proper. We chose the fifth-grade class because their teacher uses the computer in his homeroom routinely, whereas the sixth-grade teacher does not.

The Homeroom. The grade 5 students enter their classroom and group themselves around five large tables. Their teacher takes the class roll very promptly and then says, "I guess this is Group 2's day to go to the computer lab." A group of twelve children get up and walk out of the room to the computer lab next door.

Today there is one Commodore Pet computer at the side of the room. The teacher says, "Frank and Lisa on the machine." A boy and a girl go to the Pet. The teacher then gives other assignments to the rest of the children in the class, who are not using computers. Some get spelling work at the blackboard, and others are given math work at their seats. The division of labor within the class seems to be an orderly procedure.

The two children who have gone to the computer play a game of fraction estimations which was put there at the beginning of the class by the teacher. They seem to have difficulty starting on their own and adopt a trial-and-error method. The teacher goes over to the children at the computer and asks them a question to get them started: "How do you write a fraction line?" The boy says, "I don't know." The teacher asks, "Did you follow the instructions?" "Yes," says the boy, and the teacher says, "OK, try using the slash to make fractions."

By way of preparation, the teacher then says to the two children, "We have been working on equivalent fractions for the last while." He says this to remind them what is likely to be an issue with the computer task that they are working on. He then reviews a lesson in which they used mental calculations to estimate fractions. The teacher helps the children at the computer

by questioning and prompting: "In this problem, you will have to get a fraction between 2/5 and 2/6." He then gives them a lesson on fraction estimates at the blackboard, going through the process of producing a common denominator. He does an example, coming up with a fraction of 11/30, and he tells the two children to try that estimate on the computer. They try it and it works. The teacher, looking satisfied, says to them, "Now you are on your own"; he then moves to another part of the room.

The two children carry on, but it seems that they are still guessing. For example, they start with an estimate of 2/5, which is close to the desired estimate, and then they jump to 2/9, applying no apparent logic. They do this for a while, and then the boy, frustrated, says to the girl, "I quit. This is too hard." The teacher then comes over and asks what the matter is, and the children say they don't know what they are doing. He invites them over to the blackboard and starts to repeat a lesson that he did in class on common denominators. This lasts approximately five minutes, and when the teacher thinks they have grasped the concept, he sends them back to the computer.

Each pair of children receives approximately fifteen minutes on the computer. Thus the children who have just had the lesson don't go back to the computer, and the teacher calls two other children for their turn. Of this new pair, one of the boys catches on quickly, but it seems that all the children have their own particular styles. The computer feedback has some aspects which are interesting. For example, to a girl who just made a correct answer, the following response is given: YOU GET A CIGAR. In another case, after several random attempts by one girl, the following feedback is elicited: MAY I RECOMMEND A PSYCHIATRIST. It is clear, too, that when the teacher is nearby some students begin to make the program work. Given his other responsibilities in class, however, the teacher's accessibility is limited. Furthermore, no adequate instructions accompany the program.

When the other half of this fifth-grade class comes back to homeroom (not without noise or interruption), he starts a blackboard lesson on equivalent fractions with the whole class. At the end of the lesson, he comments that this is necessary in order for the children to make better use of the computer. He feels that the children need more math instruction before they can profit from this particular computer program.

The Lab. The half of this fifth-grade class assigned to the computer lab this morning comes into the lab and gathers on the rug in front of the teacher. They are scuffling and making a fair amount of noise. She says, "When you're ready . . ." Their behavior clearly implies that they are not ready, and this comment is designed to bring them into line. As one looks around the room, there are six Icons, eight Apples, and three Pet computers. (The Icon is a computer specifically designed for classroom use and was initiated by the Ontario Ministry of Education. The Apples and Pets are commercial computers.) The three Pets are not plugged in, which is what has been observed during other lab visits. The Icons have been out of order too, but today they are functional.

The teacher announces to some children that they may go over to the Icon. She says, "You can gain access to the Icon by using your name." (The name is stored in the Icon's memory.) There are a couple of children talking in low voices. The teacher stops and makes the remark, "Are you going to interrupt constantly? If you are, I would like to see you outside."

One of the boys to whom she is speaking says "No." She continues: "I would like you all today to test your log-in names to be sure they work. This is only for the Icons. Some of you will be working on the Icons, and others on the Apples. At the end of today, save your procedures and move your work to this machine over here (she points) and print it. The procedure is to design two different shapes, moving from one shape to another."

To facilitate the reader's understanding of a LOGO task, this program will be briefly described. LOGO is a procedural language specifically designed for children's education. LOGO programs are created by combining commands into groups called procedures which are then used as steps in other procedures, and so on, to higher levels of complexity. These children have been working on the LOGO program for the past two months because the Icon has not been working properly. When the students first began to use the LOGO program, the teacher let them explore its possibilities on their own. Now, according to her, she sends them to do this program with worksheet assignments because she has more specific expectations about LOGO than she had before.

Let us return once again to the task of observing. One of the students being told to log in now says to the teacher that he did not save his work from yesterday. As the children work with this program, they are expected to store their work on the computer. The teacher says, "That's no problem for today's assignment." She then says to all the children, "Let's review the differences between Apple LOGO and Icon LOGO." Because all of the children use both of the machines on a rotary basis, she attempts to eliminate confusion. Eventually, the children seem to grasp some of the differences in commands between the Apple and the Icon.

At this point, the teacher proceeds with the LOGO assignment and explains what they are supposed to be doing today. She gives the assignment quite clearly: to

write a procedure in LOGO and then save the procedure. The procedure is as follows: "Draw a geometric shape; then move to another part of the screen, and draw a different geometric shape; then stop." The choices which are offered to the children are: the type of geometric shape they wish to draw; the manner in which they want to move; and the way in which they want to do the procedure. But given this leeway, the expectation is that each student will do the same task.

The teacher now sends the children off to the machines. She instructs them: "You can work by yourselves or together, whichever you have been doing before today." Today, the children seem able to choose whatever machine they want. Most of them go immediately to the Icons. It is interesting to note varying preferences that children have for computer hardware.

One pair of boys working side by side with two Icons are starting their LOGO program together; one boy follows the exact procedures of the other boy. Boy B is copying boy A, command by command. Boy A puts in the command "Forward 16"; boy B then puts in the same command. Their designs thus turn out to be exact replicas. Boy A then turns around and says to the rest of the class, "Look, Stan is copying me." It seems that he just wants all to know that both assignments are his work.

One boy is sitting by an Apple, probably working a LOGO program. Suddenly he exclaims to everyone in general, "How big is the box supposed to be? What are we supposed to do? What are we supposed to do for Christ's sake?" The teacher does not respond. He then sits and stares for quite a long time. Finally, he goes back to work. He looks at his procedure sheet. This boy appears to know Basic (another computer language), and he has become confused because LOGO is not programmed in line numbers. He has a procedure named "Box," but it doesn't work despite several tries. He gets an "error" feedback, which tells him what his problem is, but he takes no notice. Again, he starts to exclaim to no one in particular, "What are we supposed to do? Hey, what are we supposed to do?"

A Japanese girl sitting near him comes over to him and says, "You're supposed to draw two shapes, one on either side of the screen, and all in one procedure " To illustrate, she points to her screen. Displayed on her screen, in two different parts of it, are a hexagon and a square. He pays no attention to this information and says again, "What are you supposed to do?" A boy sitting on the other side of him explains again; his explanation is similar to the girl's. This same boy has now received the instructions three times. Still he sits and says yet again, "I don't understand. What are we supposed to do?"

Another boy is struggling with his LOGO shape, and nothing seems to be working for him. His computer screen keeps flashing: THERE IS NO PROCEDURE NAMED. THERE IS NO PROCEDURE NAMED. His first problem is that he has not disengaged the "Caps Lock" key, which is a necessary step. Because the teacher is busy at the other side of the room, one of the members of our study team, seeing the small snag, tells the boy why he is having difficulty. This boy, however, continues to have problems because of a typing error. He makes little progress.

Two Japanese girls finish their procedures. They are working together, side by side, on separate computers. Their work is not exactly the same; each girl has different shapes, and their procedures too are a little different. One of the girls commands the computer to run the procedure by typing in the command "Shapes." The procedure works like a charm. She draws a square on one part of the screen, moves across the screen to draw a hexagon, and then stops. Appearing to be very pleased, she turns to her friend D and says, "Look, it works!" D is now trying hers with different shapes. It works too. She then says to girl C, "How do I save?" Girl C comes over to girl D and tells her what to type on her computer. She then stands aside and lets girl D do it herself. She does not do what many other children do—move in and take over the keyboarding. The computer, however, gives the message DISK ERROR. Girl C says, "Ask Mrs. Blair." Girl D says, "I'll go and get my disk, and then I'll try again." This time, all works well. She types "Save," the name of her procedure, and smiles as the disk light goes on, signaling that everything is working. Girl C says, "Okay, then check it. Type READ SPACE QUOTE SHAPES." "Okay," says girl D. She types in the command, and the components of this procedure are defined on the screen. Both are very pleased. They smile at each other and look fondly at the computer.

Now these same girls attempt the next step. They are trying to work out how to save a picture, quite separately from the "Save" command. The teacher has already given the procedures for "Save" and "Save Pict" and has written the review of it on a sheet. They remember most of it, but not all. They are trying to work this out through their discussion. They are talking to each other about how to save a picture. Each one has some information. They take turns making suggestions, listening to each other and trying to arrive at a solution. Their thinking and their problem solving are quite impressive, but they do not arrive at a satisfactory solution. One of them goes to get the teacher, who comes over right away. The teacher explains the instructions in an exacting manner, and in so doing she clarifies their confusion about the difference between saving a picture and the computer command "Save."

The boy who seemed stuck and kept repeating, "What am I supposed to do?" never specifically asks the teacher for help. He still sits fiddling at the computer, swearing. He gives the impression that he has no real expectation

that he is ever going to know what to do. Thus he continues to sit and accomplish nothing.

Meanwhile the two Japanese girls have completed their full procedure. Now they are taking their disk over to the Apple computer, which is connected to the printer. They encounter difficulty printing the LOGO figures. After floundering for a short time, one of them goes over to enlist the aid of the teacher. She comes over and asks them, "Did you follow the steps outlined in the chart on the wall?" One of the girls says, "Not completely, Mrs. Blair." The teacher tells them to follow the steps exactly, and she stays with them until they are halfway through them. As was indicated earlier with respect to the homeroom class, giving so much time to individuals is difficult because each teacher has so many other responsibilities in the orderly running of the class. At this point, the class ends.

The above descriptions to some extent demonstrate the variation between students in motivation and competence. Later observations, taken at the end of the school term, showed that some of the children become very competent indeed using the LOGO program.

The Rural School

Danberry Elementary School, the rural public school observed, is located in a town of several thousand in Ontario. A modern red brick structure near woodlands, the school was built in the 1960s as part of a program to consolidate one-room schools. This shift is reflected in the school's human resources as well; the principal and staff see themselves as very much a part of contemporary education.

The school serves the town in which it is located and the outlying agricultural and forested areas. The students come from a variety of backgrounds and are divided equally between the town and the surrounding area. The town itself is located within eighty miles of a metropolitan center and is within easy drive of a university. Commuters and professionals are part of the community's mix, as are those in agricultural occupations and those with rural service functions. The town also has a number of persons who value the juncture of the arts and rural life. The community, while rural, is no backwater outpost, but rather a mix of both rural and contemporary-minded individuals who are striving to revive rural values.

Ethnically Danberry School is predominantly Anglo-Saxon, with a mix of Eastern Europeans, Germans, and others plus a few Chinese, Pakistani, and black children. The emphasis of school and community alike is on the uniqueness of the area as a livable place of neighbors who are not divided and fraught by the social problems of cities.

A typical day at Danberry School goes as follows. The computer teacher, Jack, typically has classes marked by the obligatory bell ringing. Computer instruction is assigned to a very small room in the school where all of the hardware is located. Jack is in charge of this room. When the children are assigned in groups to go to the library, a small group of them will go off to the computer room. This class begins at 12:45 p.m. The class is a mixture of grades 5 and 6. One or two of the children are grade repeaters, so some of those in the same grade may be one year apart in age. The children are talking as they sit, but the librarian signals for silence and begins to list those children with overdue books. One or two try to make excuses for this low-level life of crime, but the librarian lectures them on the virtues of punctual book return. The students in the class are to receive a lesson on Canada's role in the world wars. Jack comes to get those who are scheduled for computer instruction. The librarian, in a public voice, recites the offenses against punctual return and laments the state of studentdom. Jack looks sympathetic and, half smiling, shakes his head. The students are noticeably more attentive to Jack. "Did you people do that? I'm sure you know better than that and won't do it again." Jack then takes seven children with him to the computer room. Previously, he had turned on the machines and loaded the disk drives.

The children take a couple of minutes to settle in. One boy, Shawn, sits at a computer near the door to the library. The seat next to him is vacant. Down this row, two girls (Annette and Marie) who seem to be friendly sit next to each other. Next to them is Donny, in jeans, sweatshirt, and wearing an arm bracelet. He is physically big and loud. Next to him is his friend Paul. At the desk beside the printer and opposite the door is Jimmy, a friend of Donny and Paul. Around the corner at a computer facing away from the other computers is Fred, also a friend of Donny and Paul and more verbal than Jimmy. Donny is clearly the leader of this group.

The time is 12:57. Shawn asks, "Do we have to do this? I hate this. I can't do this, and I hate it." Jack looks at him and with a quiet, but sympathetically firm, voice says, "Sit down, Shawn. You'll be able to do this." Jack begins by telling them that today he is going to teach them how to use the computer for word processing. He asks if any of them ever write stories. Fred asks, "What do we have to write about?" Jack replies, "You can write about what you want. Maybe a teacher has given you an assignment, and you have to do it. If you use the computer, you can just go ahead and write it. You don't have to worry about spelling or mistakes because you can correct them later." Marie looks slightly incredulous and says, "We don't have to spell right?" Jack replies, smiling, "Well, yes. But it's easier because you can concentrate on your ideas and correct the paper

later. Or y. · can print the story. Or you can save it on a disk." Marie asks excitedly, "We can print it?" Jack replies, "Yes you can. And if you get cleared to use the machine, you can come in here, and you are welcome to sign up to use the machines to work on your assignments."

For some children in this class, this is their first try at using a computer. Jack asks, "Do you people know how to load your drives?" Several tentatively reply "sort of" and remind Jack that they had two lessons last year. "OK," says Jack, "we'd better review some things." He holds up a floppy disk and asks, "What's this?" Chorus of responses: "A disk." Jack acknowledges their response and begins a standard lecture: "This is a floppy disk. When it's blank, it's worth maybe two dollars, but when it's loaded with special programs it may be worth a couple of hundred." Jack then goes on to list the dangers of touching disks, trying to take disks out of drives when the red light is on, and potential sources of machine failure. Jack has the children load the disks and turn the machines on and off. He circulates as he observes their activities.

The lesson progresses. Briefly, Jack reviews the various functions of the Commodore eys, what a word processing system can do, and what the children can do with word processors. Next, he reviews what types of stories they might want to write. All this takes him well past 1:15. On the basis of Jack's suggestions, the children begin to write stories as he circulates among them. They occasionally talk to one another or ask for help. Sometimes one child reaches over and operates another's keys to show how to perform a particular function. Sometimes they read each other's stories and copy from them or ridicule them. The boys tend to be more boisterous than the girls, except that Marie laughs a lot.

The children slowly complete a series of short stories of about a paragraph in length. Only Jimmy's is longer. After a while, Jack tells them to "wrap it up" so that they can print the stories. He helps various children with the printing. As this is being done the children get up and roam around, reading each other's work with sarcastic criticism or occasional admiration. During the printing, Jack repeatedly asks whose disk is hooked to the printer. He also tries to encourage the children in their writing efforts, reminding them that they are welcome to use the machines if they sign up first. Most children seem genuinely excited about getting their work printed, but neither Jimmy nor Shawn wants his printout. The printout procedure goes on past the time when the bell for the next period rings. In the corridor, there is mild pandemonium as classes change. One boy comes in and exchanges handshakes with Donny in the manner of urban ghetto gangs. Outside, there are several children waiting to use the computers for the "free" period.

The decision to have Jack teach children in all classes was intended to ensure that each student had some exposure to a computer, and this basic knowledge could then be carried to further levels of expertise by the regular classroom teacher in other classes. in specialized enriched classes, or by individual students outside school. This decision has had a number of developmental consequences. Jack has to teach eight classes, divided into four to five groups, each of which receives three to six lessons. Therefore the amount of attention he can give to each individual is strictly limited. Because groups are fractured in this way, the computer program is considerably shorter than it would be if computers were a regular, structurally integrated part of the curriculum.

How much students learn about computers, how they use them, and where and when such usage takes place is far more dependent in Danberry on extracurricular opportunity than in some other schools. This short and irregular pattern of computer instruction is further exacerbated by the lack of use of computers among most other teachers.

Computers and the Ecology of the School

We have given the reader a flavor of computer instruction in two of the schools that we observed. Although these schools differ markedly, it is nevertheless significant that the computer is not in the forefront of the average teacher's planning. The millenarian computer valuation is transplanted from the minds of the corporate and entrepreneurial sectors. When this valuation reaches the school, it hits the will of one of the most traditional instruments in all cultures: the teacher. "The strategies commonly used by promoters of changes, whether they be legislators, administrators, or other teachers, frequently do not work because they are derived from a world or from premises different from the teachers" (Fullan 1982: 115).

Even in an affluent country such as Canada, computer technologies remain on the periphery of the school system. From our extensive observations, we see no computer revolution. What we do see is incremental growth in the use of the computer by various members of the school culture. It is used in most cases by a minority of a school's personnel.

Considering the computer within an educational context, it should be emphasized that the computer does not present the school with a totally new ecological problem. We often forget that both home and school, in our modern technological environment, are filled with educational machines. Ihde (1975) lists the following: projector, tape recorder, public address system, microscope, telescope, teaching machine, and typewriter. More recently, there is the videocassette recorder. When these machines are working properly,

they are on the periphery of our awareness, accomplish ing their function in an unobtrusive way.

The computer (as the *Time* magazine story intimates) promises to change all that. In the school, we are possibly seeing for the first time a machine that will be a figure as opposed to background in the educational ecology. Ihde (1975) notes two aspects of this experience: the machine "extends" and "stretches" our experience outward toward the environment; at the same time, the machine is "taken into" our self-experience:

> It is clear from the description above that an opacity relationship, like a person-computer relationship, is not mechanical in nature. The mechanical aspects are clearly subsidiary. The focal relationship is a person-quasi-other in which some type of communication is happening. We have not explored the cultural implications of these types of relationships before, but computer use will force the issue. To describe a machine as "user-friendly" indicates the possibility of a quasi-personal relationship in which communication can be achieved and this underlines the probability that "computer literacy" should have preemptive importance in future educational planning. (Turkel 1984)

In this relationship, the machine is in conversation with the person (Ihde 1975).

Comparison of the computer and the textbook reveals no essential difference between computer print and text print. If the computer is the medium—the pen and paper of the electronic age—then software is the array of text forms by which we are to become "literate." This array shapes forms of language and syntactical means to deliver varying discourses. How well does educational software rate in the classroom against more traditional forms? Commercial hyperbole already gives computer texts the nod: "Given suitable and skillful programming, computer teaching can have a significant advantage over conventional classroom teaching" (Martin 1981: 184).

Our own observations neither sustain this optimism nor totally negate it. At present, it seems that the computer will replace encyclopedias, dictionaries, and often major reference works for the storage of information because there appears to be no reduction in quality or difference in usage (Evans 1979). Computer storage will offer enormous savings of physical space. Moreover, looking up references, the reader of computerized texts need not normally spend a long time in front of terminals, and therefore need not be exposed to possible health hazards such as radiation, stress, and other morbid ailments associated with long-term use (see Geiser 1985).

It is our view that the computer is not that well established in the school context although interest in it is increasing. We have absolutely no evidence from our studies that the computer as a replacement for the textbook is contemplated seriously at any level by ministries of education, board administrators, computer coordinators, principals, and teachers. The computer is a medium for literacy via a screen rather than a page and is unlikely to rival textbooks in the next fifty years, despite the views of computer enthusiasts. As Bruce (1985: 37) states:

> The problems with all of these views is that they tend to locate the source of the computer's power to offset education in the computer itself. Thus we hear that computers will teach children to read, or computers will turn schools into assembly lines. In fact, the computers per se do nothing; they are simply tools which can amplify the power people have and the social relations they engage in. In that sense, the positive or negative consequences realized by computers will be caused by people making the most of computers to accomplish ends for change in education.

As mentioned, software is the literacy text of the computer The most astute observers of software development are highly dubious of its present benefits for education (Ragsdale 1982, 1985). At this point, there is a great deal of controversy over how software should be evaluated (see Ragsdale 1982).

Conclusions

We believe that the considerations we have outlined merit a serious analysis of cultural and educational priorities (Sullivan 1984). No doubt people involved in textbook publishing will be perplexed that we have raised more questions than we have answered. We feel, however, that it would be irresponsible of us to offer pat scenarios when there are none. Yet intellectual honesty does not prevent us from making prudent suggestions:

- First, for national archival data, encyclopedias, dictionaries, and major reference works, computers offer a very important memory requiring little physical space.
- Second, each country should carefully consider whether computers would serve as well as textbooks in transmitting its cultural heritage.
- Third, it would be profoundly misguided for countries with marginal risk capital to embark on the costly business of developing computer-assisted instruction software.
- Fourth, computer textbooks are not real educational necessities.
- Fifth, if "imitation is the greatest form of flattery," then it may be well to monitor countries in which capital ventures are being undertaken to develop

educational computer texts. Imitation may accompany cultural imperialism. Caveat emptor.

Note

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